

# **PRINCIPLES OF BEHAVIORAL ECONOMICS**

**Prof. Sujata Kar**

**Department of Management Studies  
IIT Roorkee**

**Week 35**

**Lecture 35**

Hello everyone. This is the course on Principles of Behavioral Economics, and we are at lecture 35. From the 31st lecture or module, we started discussing mental accounting. In the previous module, we were discussing some applications of mental accounting, where we discussed the opening and closing of accounts and related concepts. Within that, we talked about advanced purchases, sunk cost, and payment depreciation. In continuation of that, there is a concept called payment decoupling. So, in the wine example that we discussed under payment depreciation, the prepayment separates or decouples the purchase from the consumption,

and in doing so, seems to reduce the perceived cost of the activity. So, in case you remember, there was this experiment where people were asked some questions. Ideally, they were asked to assume that they had purchased, in one case, one bottle of Bordeaux, and in another case, a case of Bordeaux. And then the price increased over a period of time. And then they were asked to express their opinion about what they thought of the cost of drinking the wine after, say, a substantially later period,

say after 10 years or so, when the price had substantially gone up. And what has been observed is that a large number think that they are drinking the wine free of cost, or some even think that they are saving, say, \$55 when the ongoing market price is \$75, and they purchased the bottle of wine at a price of \$20. So they think that they are saving \$55 by drinking one bottle. So in the next experiment, people thought that

the wine that they purchased for say \$400 a case, when the price increases to \$500, then they consider it more like an investment. So, something which was purchased and later on consumed was now considered to be an investment, though they were not going to actually sell those wines and make money. Nevertheless, this was discussed in the context of payment depreciation. The payment that we make for one particular thing and if we hold on to or use that thing for a long period of time or hold on to that, if the

consumption is at a later period, then most often the payment depreciates over a period of time.

So, a related concept is that of payment decoupling as mentioned here. So, decouples, under payment decoupling, basically the purchase and the consumption, they are decoupled. Prepayment can often serve this role. So basically when we are paying for the product in advance but consuming at a later date. But the mental accounting advantages of decoupling are not all associated with prepayment only.

There are other instances also when we can see payment decoupling. Consider the case of pricing policies of the luxury club resorts. At these vacation spots, consumers pay a fixed fee for a vacation that includes meals, lodging and recreation. For example, we also have Maharaja Club or Club Mahindra.

So you pay for those clubs for membership on an annual basis, and then you basically avail certain facilities. So when you go on vacation, you are provided certain services that include meals, lodging, and certain recreation. Now, this plan has two advantages. First, the extra cost of including the meals and recreation in the price will look relatively small when combined with the other costs of the vacation. For example, you have paid, say, 30,000 for a vacation.

If you look at the meals that are included—one breakfast, one dinner, one lunch—then the prices would be relatively small compared to individual item prices or the total amount that you have paid. The second one is that under the alternative plan, each of the small expenditures looks large by itself and is likely to be accompanied by a substantial dose of negative transaction utility, given the prices found at most resorts. So the alternative is that if you actually compare, say, this actually says that if you compare the resort prices with the regular prices, then you would find them exorbitantly large

and then there will be a lot of negative utility associated with them, and you might not be willing to consume them. For example, if you are asked to pay, say, 5,000 for a breakfast, then you would find that exorbitant, right? But if the 5,000 is clubbed with a 30,000 package, then, of course, 5,000 is just a small component, one-sixth of the entire package. And that is another thing that we'll be talking about: since it is not an individual item, it loses its salience.

So another disadvantage of the piece-rate pricing policy is that it makes the link between the payment and the specific consumption act very salient when the opposite is highly

desirable. So piece-rate pricing is basically when you are paying for individual services—for breakfast, for lunch, for dinner, for recreation. You are paying separately for each of the recreational activities. Then, of course, 5000 rupees for a breakfast not only creates a lot of negative transaction utility but also makes the link between the payment and the specific consumption extremely salient.

Whereas if we cover them up along with other expenditures, then the salience is lost, and this is rather desirable from the perspective of the individuals or the companies providing the services. For example, an expensive multi-course meal avoids the unsavory prospect of matching a very high price with a very small quantity of food offered in each course. So again, if we can take an example that it's an expensive multi-course meal, you would be provided with a large number of items. But then in each item, the quantity would be very small. So if you individually match the price with the quantity, then that would be upsetting.

But here by combining them together the salience is lost. The link between the payment and the service is actually lost and as a result of which that does not provide us much negative transaction utility. Along the same lines, many urban car owners would be financially better off selling their car and using a combination of taxis and car rentals. However, paying small amounts to take a taxi to the supermarket or a movie is both salient and linked to the Consumption Act. It seems to raise the price of groceries and movies in a way that monthly car payments do not.

So ideally, I also knew one individual who for a long period of time did not own a personal car because he always felt that renting cars for going out—like whenever we went outside—was better. He used to live in a campus. So going out to the city or for any other purpose becomes much cheaper compared to having one's own car. This includes daily consumption of petrol, services, regular maintenance of the car, cleaning, and other expenses, aside from the initial purchase amount. So actually, you know, the financial implications are true—we would be financially better off if we did not have our own cars.

Or rather, we use a combination of taxis and rentals. But why do we prefer that? Because when I drive my car to the nearby superstore, I do not need to calculate the expenditure of driving the car or taking the car to the supermarket, with the price of groceries, or wherever we are going—like going to a movie. But if I am renting a taxi, then of course, first of all, the payment becomes salient. The consumption and the purchase—the link

actually becomes salient. And then this cost would be added to the items that we are purchasing or the purpose for which we are going—like going to a movie.

So for movie tickets, I pay 300 for the taxi. So basically, the expenditure becomes extremely visible, and visibility increases salience. This is called the flat-rate bias in telecommunications—when we prefer to go for combined services. Most telephone customers elect a flat-rate service even though paying by the call would cost them less. It is said that consumers

seem to value flat-rate service over measured service, even when the bill that the consumer would receive under the two services—given the number of calls the consumer places—would be the same. Similarly, health clubs typically charge members by the month or year rather than on a per-use basis because, again, if charged on a per-use basis, the consumption or the transaction becomes salient, and as a result, that is sort of a discouragement for individuals to use those health clubs. So you pay once, then there is, of course, payment depreciation, payment decoupling, and that encourages people not to pay on a daily basis. Basically, that encourages people to attend or rather go for the subscription of the health clubs.

The strategy decouples usage from fees, making the marginal cost of a visit zero. So, the first visit, when you are paying, then there are certain costs. But for additional visits, the marginal cost is zero. You think, or you rather perceive that the additional visits are free of cost.

This plan is attractive because a health club is a service that many consumers feel they should use more often but fail to do so for self-control reasons. Indeed, the monthly fee, although a sunk cost, encourages use for those who want to reduce their per-visit charges. Now, compare this system to a pure usage-based pricing system. This pricing system would be completely incompatible with the psychological needs of the club member who desires usage encouragement rather than discouragement. Perhaps the best decoupling device is the credit card.

We know that credit cards facilitate spending simply by the fact that stores are willing to pay 2% or more of their revenues to the card companies. A credit card decouples the purchase from the payment in several ways. First, it postpones the payment by a few weeks. This delay creates two distinct effects. The payment is later than the purchase.

The payment is separated from the purchase. So we have both the advantages. The payment delay might be attractive to some consumers who are either highly impatient or liquidity constrained. But consumers prefer to pay before rather than after. This has been observed or claimed by some studies.

So this factor is unlikely to be the main appeal for credit card purchasers. Nevertheless, there might be liquidity constraints for a large number of individuals, and as a result, of course, liquidity constraints could be one reason why credit cards should be preferred. But the simple separation of purchase and payment appears to make the payment less salient. It has been observed that students leaving the campus bookstore were much more accurate in remembering the amount of their purchases.

If they paid by cash, rather than by credit card, and that is probably happening with us also. So first of all, when we are making individual payments, then of course the expenditure becomes salient. Like if I go to a store and buy a register for 50 rupees, then that registers in my mind more than if I buy several things and pay a total bill of 300 rupees. I might not be able to remember the individual prices. So combining them actually loses the salience. The second point is that when I am making a payment through a card or even through UPI, then also the salience is lost

as compared to or reduced as compared to when we were making the purchases using cash. Payment by credit card thus reduces the salience and vividness of the outflows, making them harder to recall than payments by cash or cheque, which leave a stronger memory trace. A second factor contributing to the attractiveness of credit card spending is that once the bill arrives, the purchase is mixed in with many others. So that is what I was also talking about—that if I purchase six different things and the total bill is say 300 or 350 rupees then I might not be able to remember the prices of individual items so when things are combined then a particular item or transactions become less salient.

So compare the impact of paying \$50 in cash at the store to that of adding a \$50 item to an \$843 bill. Psychophysics implies that the \$50 will appear larger by itself than in the context of a much larger bill. And in addition, when the bill contains many items, each one will lose salience. The effect becomes even stronger if the bill is not paid in full immediately. So, for example, I go to a superstore and I purchase things worth, say, 1500 rupees roughly, and that too I paid by credit card.

Now, of course, there is a certain thing which costs me 105 rupees. Now, compared to a bill of 1500, 105 rupees is a much smaller amount. So, again, the example when we are

combining things, then individual items do not appear large or much larger when the total bill is much larger, and the second thing is that each one loses its salience. The third factor is that we are not paying the bill in full immediately. I know that I am making the payment now, after a few days my credit card bill will arrive, and

after 20 days of that, I am supposed to pay the bill. So basically, somewhere in my mind, I know that I actually did not make any payment for this transaction right at this moment. So although an unpaid balance is aversive in and of itself, it is difficult for the consumer to attribute this balance to any particular purchase. So this is basically the broad idea of payment decoupling: that we are not able to assign a particular amount or payment to a particular commodity, so then there is basically payment decoupling, and

in that process, the transaction loses its salience for various reasons mentioned here, and that basically is an encouragement for consumers to spend more. Next, we talk about the concept of budgeting. An important component of mental accounting is categorization or labeling. Money is commonly labeled at three levels. First, expenditures are grouped into budgets, for example, food, housing, etc. All the heads on which we make expenses or we spend.

Then, the second one is wealth allocated into accounts—for example, wherever we save our money. Our pension account, our checking account, and then when we save money in a particular account, which we generally do not touch. So, for rainy days, and these days, we have several other options. We have mutual funds where we invest. We also invest in the stock market, though that is a risky business.

Nevertheless, that is where we keep our money and expect it to grow over time. So, these are all wealth accounts. And finally, income is divided into categories, which are regular or windfall. I have also previously mentioned these three categories in some other context. Such accounts would be inconsequential if they were perfectly fungible—that is, substitutable, as assumed in economics.

But in reality, we have previously discussed, and now we will also discuss, that they are not fungible. The transactions across accounts are, in fact, not fungible. We will be talking about several types of budgeting. So, we begin with consumption categories or budgeting in consumption categories. Then, we will be talking about wealth accounts, and finally, income accounts.

So, beginning with consumption categories, dividing spending into budget categories serves two purposes. First, the budgeting process can facilitate making rational trade-offs between competing uses of funds. Second, the system can act as a self-control device. Just as organizations establish budgets to keep track of and limit divisional spending, the mental accounting system is the household's way of keeping spending within the budget.

Of course, there is considerable variation among households in how explicit the budgeting process is. As a rule, the tighter the budget, the more explicit the budgeting rules are, both in households and organizations. Because the less money you have, the more, you know, particularly you have to be careful about allocating money to different categories. So this is how organizations, along with individuals, also allocate budgets.

Families living near the poverty level use strict, explicit budgets. While in wealthy families, budgets are both less binding and less well-defined. And for very rich families, there might not be any consumption budgets altogether because they have too much extra funds left with them. Poorer families also tend to have budgets defined over shorter periods, for example, a week or month, whereas wealthier families may use annual budgets. So since the funds are less, the budget is tight.

So you have to actually monitor your consumption or expenditures more frequently, as a result of which your budgets are defined over shorter periods of time. Now, for proper budgeting, expenses need to be tracked following a two stage process. Expenses must first be noticed, which is equivalent to booking or recorded in financial accounting and assigned to their proper accounts, which could be equivalent to posting in financial accounting. Each process depends on a different cognitive system. Booking depends on attention and memory.

Posting depends on similarity, judgments and categorization. Many small routine expenses are not booked. Examples would include lunch or coffee at the workplace cafeteria. In a similar fashion, in organizations also, we know that there are certain heads which include petty expenses. So whenever we have meetings in the departments or in offices, some teas and snacks are served.

So they go under the petty cash, the miscellaneous expenses for which it's not necessary always to produce bills. So certain amount is kept there. In a similar fashion, we also in our daily lives experience certain routine expenses and that are actually not booked. Ignoring such items is equivalent to the organizational practice of assigning small expenditures to a petty cash fund not subject to the usual accounting scrutiny. The

tendency to ignore small items may also explain an apparent contradiction of hedonic framing.

In many situations, sellers and fundraisers elect to frame an annual fee as pennies a day. Thus, a \$100 membership for the local public radio station might be described as a mere 27 cents a day. Now, given the convex shape of the loss function, why should this strategy be effective? One possibility is that, because I am talking about this—the shape of the loss function—because we discussed that we should be integrating the losses

in order to feel the pinch less. Now, here we are talking about segregating the losses. A \$100 membership is segregated into 27 cents a day. Then if we believe in hedonic framing or hedonic editing hypothesis rules, then why is this also valid? So one possibility is that 27 cents is clearly in the petty cash category. So when the expense is framed this way, it tends to be compared to other items that are also not booked. So if you pay \$100, then that is a substantial amount that has to be booked somewhere.

When you divide them into smaller amounts, then you do not need to book them because 27 is actually a very small number. In a similar fashion, you might have come across advertisements by insurance companies where they say that, for example, 26 rupees a day is the premium you need to pay. Now, 26 rupees a day, when multiplied by 365 days, equals approximately something between 9,000 and 10,000. So, let us consider it to be, say, 9,000, and in that case, again, you can see that this is approximately 9,000.

So, a premium amount of 9000 if asked to pay in one go there might be many people who will not be able to pay. But when they have divided into smaller amounts then again they loses the importance -- it does not look really much big and they can be included into the petty cash category, which you do not need to book. You just need to pay 26 rupees on a daily basis. So every day, we spend so much on smaller things, specifically small food items, tea, snacks, etc.

So, in a similar fashion, it goes there. So, in contrast, a hundred-dollar membership is large enough that it will surely be booked and posted, possibly running into binding budget constraints in the charitable giving category. The same idea works in the opposite direction. A firm that markets a drug to help people quit smoking urges smokers to aggregate their annual smoking expenditures and think of the vacation they could take with these funds. So again, \$2 a day might be ignored, but \$730 could pay for a nice getaway.

So basically, you cannot ignore \$730, but when you are spending \$2 a day, then that does not pinch you much because it goes into the petty cash. So those who urge you to quit smoking, they would actually integrate your losses and tell you that this is the amount that you are paying on an annual basis or you are just burning on an annual basis, inflicting additional damages to your body. So, you should quit smoking.

So that's the idea behind this kind of integration of losses. Now we talk about the implications of violations of fungibility. Whenever budgets are not fungible, it is possible that one budget has been spent up to its limit, while other accounts have unspent funds remaining. This situation is common in organizations and creates extreme distortions, especially when funds cannot be carried over from one year to the next. In this case, one department can be severely constrained while another is desperately looking for ways to spend down this year's budget to make sure next year's is not cut.

There are several experiments to illustrate this effect. In a typical study, two groups of subjects were asked whether they would be willing to buy a ticket to a play. One group was told that they had spent \$50 earlier in the week going to a basketball game. That is, it is the same budget you are using for recreation. You are either going to a basketball game or you are actually going to a play.

The other group was told that they had received a \$50 parking ticket. So that's a different budget earlier in the week. Those who had already gone to the basketball game were significantly less likely to go to the play than those who had gotten the parking ticket. Using the same logic that implies that money should be fungible, economists have argued that time should also be fungible. A rational person should allocate time optimally, which implies equating at the margin.

In this case, the marginal value of an extra minute devoted to any activity should be equal. So what it says is that I have 24 hours. I would be sleeping, eating, doing some regular chores other than might be studying, might be painting, might be finding some time with friends. So for each and every activity at the margin when I'll be having, say I'll be continuing with one particular work only till the time When the last minute spent on that particular activity gives me equal satisfaction or happiness from all the activities.

So I keep on doing something. I start getting bored after a while. So when I stop working on that or when I decide to stop working or continuing with that activity, then the satisfaction generated at the last minute should be all equal for all the activities. However, the jacket and calculator problem reveals that this rule does not describe choices about

time. In that experiment, subjects were willing to spend 20 minutes to save \$5 on a small purchase but not a large one.

In a reverse situation, people were asked how much they would be willing to pay to avoid waiting in a ticket line for 45 minutes. It was observed that People are willing to pay twice as much to avoid the wait for a \$45 purchase than for a \$15 purchase. So you see, again, things are extremely contextual. You are willing to pay some amount to stand in a line where the ticket price is \$45 and some amount you are willing to pay when you are going to purchase a ticket for \$15.

Now, people are willing to pay twice the amount when the ticket price is also large. Now, here also, see, they were willing to spend 20 minutes to save \$5 and on a small purchase, say \$15 purchase, but they were not willing to do so for \$125 purchase. So, actually, it has nothing to do with the marginal cost at the last minute or marginal satisfaction at the last minute. Overall, the implicit value people put on their time depends on the financial context. So in the financial context change, then of course the value also changes.

In the next we talk about the problem of self-control. Another violation of fungibility introduced by the budgeting system occurs because some budgets are intentionally set too low in order to help deal with particularly insidious self-control problems. So if you want to control your expenses on certain commodities, certain products, certain services, then you keep the budget low there. That's the basic idea here. For example, suppose you are very fond of a full course meal offered in an uptown high-end restaurant.

However, you can afford to spend so much only once in a month and therefore you have set your budget accordingly on a monthly basis. This policy might not be optimal in the sense that an occasional spending in excess of your budget would be worth more than the amount set aside. But you don't trust yourself to resist the temptation to increase your budget unreasonably to break the budget barrier. And implication is that you greatly enjoy treats to such high-end restaurants that are above your usual budget constraint. So basically when somebody treats you, then you greatly appreciate that or enjoy that understandably.

So in this context, we also talk about gift-giving. This analysis is precisely the opposite of usual economic advice, which says that a gift in kind can be, at best, as good as a gift of cash, and then only if it were something that the recipient would have bought anyway. Instead, the mental accounting analysis suggests that the best gifts are somewhat more

luxurious than what the recipient normally buys, consistent with the conventional advice, which is to buy people something they wouldn't buy for themselves.

So when you are gifting something, and you are not gifting out of compulsion, rather, you actually, with genuine emotions, want to gift something to somebody. Then you would be going for something which, of course, is within your budget. But then the person would appreciate it. What is the person going to appreciate?

The person is going to appreciate the most something which they themselves are not willing to spend money on, maybe not able to afford. So this is what is suggested by mental accounting as well, but not by the traditional theories. So the idea that luxurious gifts can be better than cash is well known. When sales contests are run, the prize is typically a trip or luxury durable rather than cash.

The analysis of gift-giving illustrates how self-control problems can influence choices. For tempting products, consumers may regulate their consumption in part by buying small quantities at a time, thus keeping inventories low. This practice creates the odd situation wherein consumers may be willing to pay a premium for a smaller quantity. So, for example, you are very fond of ice cream. If you keep a huge stock, then you understand that you would end up consuming a lot of calories.

So, basically, buy a small quantity. Most often, smaller quantities come with a higher price, and that's why it is said that consumers may be willing to pay a premium for a smaller quantity. The price premium for sinful products in small packages is greater than for more mundane goods. To control their consumption, consumers pay more for less of what they like too much. With this, I conclude this module.

We will continue with discussions on related topics, specifically on wealth accounts, behavioral and classical life-cycle theories related to the concept of wealth accounts in the next module. Thank you.