LECTURE 2a

Behavioral Economics

This chapter is taken from Varian's "Intermediate Microeconomics"

What Is Behavioral Economics?

◆ The study of choices actually made by economic decision makers in an effort to assess the strengths and weaknesses of the rational choice model that is the mainstay of modern economics.

The Rational Choice Model

◆ A decision maker's choice is rational if it is a most preferred choice from the choices that are available to the decision maker.

The Rational Choice Model

◆ By most measures the rational choice model is very successful when applied to choice problems without uncertainty. For these problems it predicts well how people choose.

◆ But any model is only an approximation.

The Value of Behavioral Economics

◆ Behavioral economists have demonstrated that the rational choice model systematically predicts behavior less well in specific circumstances.

◆ These demonstrations direct economists to where the rational choice model must be improved.

Behavioral Economics; Framing Effects

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◆ Would you pay €10 for a bottle of hair shampoo in a discount supermarket?

Behavioral Economics; Framing Effects

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◆ Would you pay €10 for a bottle of hair shampoo in an expensive hair salon?

◆ Would you pay €10 for a bottle of hair shampoo in a discount supermarket?

◆ Typically, such shampoos are almost identical apart from packaging.

Behavioral Economics; Framing Effects

◆ The rational choice model with full information predicts that the consumer would pay the lower price for shampoo since packaging is less important than the hair-cleaning agents.

◆ But many people prefer to buy the more expensive shampoo.

◆ Similarly, a faded pair of jeans in a thrift shop may be perceived very differently than the same jeans sold in an exclusive store.

Behavioral Economics; Framing Effects

◆ Framing effects are particularly common in choices involving uncertainty. E.g. A serious disease threatens 600 people. You are offered a choice between two treatments, A and B, which will yield the following outcomes.

◆ 600 lives are threatened.

  – Action (a) saves 200 lives.

  – Action (b) saves all 600 lives with probability 1/3 and saves nobody with probability 2/3.

◆ Which action would you choose? (a) or (b)?

Behavioral Economics; Framing Effects

◆ 600 lives are threatened.

 – Action (c) causes 400 to die.

 – Action (d) causes 600 to die with probability 2/3 and causes nobody to die with probability 1/3.

◆ Which action would you choose? (c) or (d)?

Behavioral Economics; Framing Effects

◆ 600 lives are threatened.
- Action (a) saves 200 lives.
- Action (b) saves all 600 lives with probability 1/3 and saves nobody with probability 2/3.

◆ 600 lives are threatened.
- Action (c) causes 400 to die.
- Action (d) causes 600 to die with probability 2/3 and causes nobody to die with probability 1/3.

These problems are identical, apart from how they are framed.
Yet the most common (highlighted) choices are different.

Behavioral Economics; Framing Effects

◆ In the positive framing comparison—which describes how many people will live—most individuals choose A over B, but in the negative framing comparison most people choose D over C even though the outcomes in A-C and B-D are exactly the same. Apparently, framing the question positively

◆ (in terms of lives saved) makes a treatment much more attractive than framing the choice negatively (in terms of lives lost).

◆ Even expert decisions makers can fall into this trap.

Behavioral Economics; Framing Effects

◆ When psychologists tried this question on a group of physicians, 72 percent of them chose the safe treatment A over the risky treatment B. But when the question was framed negatively, only 22 percent chose the risky treatment C while 72 percent chose the safe treatment.

◆ Though few of us are faced with life-or-death decisions, there are similar examples for more mundane choices, such as buying or selling stocks.

Behavioral Economics; Anchoring Effects

◆ **Anchoring** How do shoppers decide whether the price of a product is high or low?

◆ Behavioral economists use the word *anchoring* to describe one aspect of how consumers evaluate prices. If people are uncertain about a value, such as a price, they often relate—or anchor—that value to some other known value, even if the second value is irrelevant.

Behavioral Economics; Anchoring Effects

◆ Psychologists Amos Tversky and Daniel Kahneman carried out an experiment to illustrate the effects of anchoring.

◆ They constructed a wheel that when spun always stopped on a value of either 10 or 65. For each group of participants in the experiment, they spun the wheel and then asked that group:

◆ "What is your best guess of the percentage of African nations in the United Nations?"

Behavioral Economics; Anchoring Effects

◆ When the wheel stopped on a value of 10 when spun for that group, the average answer was 25 percent.

◆ When the wheel stopped on 65, the average answer was 45 percent. Even though the value from the spin of the wheel had no relevance to the question being asked, the value anchored the participants' responses.

◆ The guesses were clearly influenced by the outcomes of the wheel.

Behavioral Economics; Anchoring Effects

◆ A simple gambling game is "two-up." Two coins are placed on a stick and then tossed up in the air. You win a bet if the coins fall with either two heads or two tails showing; otherwise you lose. Thus on each toss you win with chance ½ and lose with chance ½. Each toss is an independent event. Yet a player who has just won is more likely to continue to bet than is a player who has just lost.

Behavioral Economics; Anchoring Effects

◆ Often inferior default choices persist.

◆ You start a job with a health insurance benefit. The default insurer may not be the most preferred, yet many people never change.

◆ You start a job with a pension benefit. By default, your contributions go into a low-yield money market account. You could change to a higher-yield stock market account. Many people stay with the default option.

◆ The rational choice model predicts that inferior choices will immediately be replaced.

Behavioral Economics; Rules of Thumb

◆ Behavioral economists argue that it *does* matter that consumers usually do not make optimal consumption choices.

◆ These economists believe that there are benefits to analyzing *how* consumers actually make decisions.

◆ The traditional neoclassical model assumes that: When people shop, they have full information on the prices of products, including information on differences in prices across stores.

◆ People can make complicated calculations such as computing the ratios of marginal utilities to prices across many products.

Behavioral Economics; Rules of Thub

◆ In fact, people often make choices on the basis of only limited information and without the time or capacity to calculate their optimal choices.

◆ As a result, rather than make optimal choices, people often use *rules of thumb*, which are guides to decision making that may not produce optimal choices.

◆ For example, you may decide that a particular supermarket has the lowest prices for the products you buy, without continually checking whether this assumption is correct.

Behavioral Economics; Rules of Thub

◆ If a new supermarket with lower prices opens, at least for a period, you may continue shopping at the old supermarket, even though doing so is no longer optimal.

Behavioral Economics; Bracketing

◆ People often have trouble understanding their own behavior, finding it too difficult to predict what they will actually choose in different circumstances.

◆ For example, a marketing professor gave students a choice of six different snacks that they could consume in each of three successive weeks during class. In one treatment, the students had to choose the snacks in advance; in the other treatment, they chose the snacks on each day then immediately consumed them.

Behavioral Economics; Bracketing

◆ When the students had to choose in advance, they chose a much more diverse set of snacks. In fact, 64 percent chose a different snack each week in this treatment compared to only 9 percent in the other group. When faced with making the choices all at once, people apparently preferred variety to exclusivity.

◆ But when it came down to actually choosing, they made the choice with which they were most comfortable. We are all creatures of habit, even in our choice of snacks.

Behavioral Economics; Increased Choice

◆ Can you be worse off if the number of options for you to choose from is increased?

◆ Conventional theory argues that more choice is better. However, this claim ignores the costs of making choices.

◆ In affluent countries, consumers can easily become overwhelmed with choices, making it difficult for them to arrive at a decision.

Behavioral Economics; Increased Choice

◆ In one experiment, two marketing researchers set up sampling booths for jam in a supermarket. One booth offered 24 flavors and one offered only 6. More people stopped at the larger display, but substantially more people actually bought jam at the smaller display.

◆ More choice seemed to be attractive to shoppers, but the profusion of choices in the larger display appeared to make it more difficult for the shoppers to reach a decision.

Behavioral Economics; Increased Choice

◆ Two experts in behavioral finance wondered whether the same problem with "excessive choice" showed up in investor decisions.

◆ They found that people who designed their own retirement portfolios tended to be just as happy with the average portfolio chosen by their co-workers as they were with their own choice.

◆ Having the flexibility to construct their own retirement portfolios didn't seem to make investors feel better off.

Behavioral Economics; Learning About Preferences

◆ How are we to interpret these examples?

◆ Psychologists and behavioral economists argue that preferences are not a guide to choice; rather, preferences are "discovered" in part through the experiences of choice.

◆ Imagine watching someone in the supermarket picking up a tomato, putting it down, then picking it up again. Do they want it or not? Is the price-quality combination offered acceptable?

Behavioral Economics; Learning About Preferences

◆ How are we to interpret these examples? Psychologists and behavioral economists argue that preferences are not a guide to choice; rather, preferences are "discovered" in part through the experiences of choice.

◆ If a cocaine addict could go back in time to the moment when he first experimented with cocaine but knew then what he now knows about the drug and addiction, would he consume the drug?

◆ Conventional theory treats preferences as preexisting. In this view, preferences *explain* behavior. Psychologists instead think of preferences as being constructed— people develop or create preferences through the act of choosing and consuming.

Behavioral Economics; Uncertainty

◆ The Law of Large Numbers says that the mean of a large sample drawn randomly from a population is very likely to be very close to the mean of the whole population.

◆ Kahneman and Tversky's Law of Small Numbers says that an individual's choices are overly influenced by the outcomes in a small sample, especially if the sampling is personally experienced by the individual.

Behavioral Economics; Uncertainty

◆ Consider the following question:

◆ "A certain town is served by two hospitals.

◆ In the larger hospital about 45 babies are born each day, and in the smaller hospital about 15 babies are born each day. As you know, about 50 percent of all babies are boys.

◆ However, the exact percentage varies from day to day. Sometimes it may be higher than 50 percent, sometimes lower.

◆ For a period of 1 year, each hospital recorded the days on which more than 60 percent of the babies born were boys. Which hospital do you think recorded more such days?"

Behavioral Economics; Uncertainty

◆ In a survey of college students, 22 percent of the subjects said that they thought that it was more likely that the larger hospital recorded more such days, while 56 percent said that they thought the number of days would be about the same.

◆ Only 22 percent correctly said that the smaller hospital would report more days.

◆ If the correct account seems peculiar to you, suppose the smaller hospital recorded 2 births per day and the larger hospital 100 births per day.

◆ Roughly 25 percent of the time the smaller hospital would have 100 percent male births, while this would be very rare for the large hospital.

Behavioral Economics; Uncertainty

◆ Why do people gamble at casinos when they know that casinos make large profits because, on average, gamblers lose money?

◆ Many people who buy a new appliance (*e.g.* a refrigerator or a TV) also buy insurance against its failure in the early part of its life, even though the probability of a failure is very low and the expected value of the insurance is far less than its price.

Behavioral Economics; Uncertainty

◆ The evidence is that people assign larger weights to very low probability events than is consistent with the expected utility model of choice.

Behavioral Economics; Sunk Costs

◆ A **sunk cost** is a cost that has already been paid

◆ and cannot be recovered. Once you have paid money and can't get it back, you should ignore that money in any later decisions you make.

◆ It is common for a person selling a house to want to "get back" the money used to buy and improve the house (*i.e.,* recover the sunk cost.) even though he understands that buyers don't care about his past expenses.

Behavioral Economics; Sunk Costs

◆ Consider the following two situations:

◆ **Situation 1:** You bought a ticket to a play for €25. The ticket is nonrefundable and must be used on Tuesday night. An hour before the play will begin (too late to successfully resell your ticket), a friend calls and invites you to a local comedy club to see a comedian you both like who is appearing only on Tuesday night.

◆ Your friend offers to pay the cost of going to the club.

Behavioral Economics; Sunk Costs

◆ ***Situation 2:*** It's Tuesday afternoon, and you are about to buy a ticket for that night's performance of the same play as in situation 1. As you are logging on the theater's site to buy the ticket, your friend calls and invites you to the comedy club.

◆ Would your decision to go to the play or the comedy club be different in situation 1 than in situation 2?

Behavioral Economics; Sunk Costs

◆ Most people would say that in situation 1, they would go to the play because otherwise they would lose the €25 they had paid for the ticket. In fact, the €25 is "lost" no matter what you do because the ticket is nonrefundable, and you don't have time to resell it.

Behavioral Economics; Sunk Costs

◆ The only real issue for you to decide is whether you would prefer to see the play or prefer to go with your friend to the comedy club.

◆ If you would prefer to go to the club, the fact that you have already paid €25 for the ticket to the play is irrelevant.

◆ Your decision should be the same in situation 1 as in situation 2.

Behavioral Economics; Costs of Delay

◆ €1 given to a person one month from now is usually valued by that person at less than €1 given now.

◆ If the value today of the €1 provided one month from now is €δ < €1, then the person's monthly time-discount factor is δ < 1.

◆ The value now of €1 provided two months from now should therefore be $\delta \times$ €δ = €δ^2.

◆ More generally, the present-value of €1 provided n months from now should be €δ^n.

◆ This is exponential discounting.

Behavioral Economics; Costs of Delay

◆ Exponential discounting: the present-value of €1 received n months from now is $€\delta^n$.

◆ Time-consistency; how a person values future costs and benefits does not change with time.

Behavioral Economics; Costs of Delay

◆ Getting 1 euro, 3 months from now can be viewed as:

- – getting now the promise of 1 euro 3 months from now; present-value = €δ^3, or

- – getting now the promise of getting 1 month from now the promise of getting €1 after a further 2 months;
  present-value = $\delta \times$ €δ^2 = €δ^3.

Behavioral Economics; Costs of Delay

◆ Getting 1 euro 3 months from now can be viewed as:

- getting now the promise of €1 3 months from now; present-value = €δ^3, or

- getting now the promise of getting 1 month from now the promise of getting 1 euro after a further 2 months;
present-value = $\delta \times$ €δ^2 = €δ^3.

◆ But people seem to value these alternatives differently.

Behavioral Economics; Costs of Delay

◆ Hyperbolic discounting: the present-value of €1 received n months from now is €1/(1 + kn), where k > 0.

◆ Hyperbolic discounting is not time-consistent.

Behavioral Economics; Costs of Delay

◆ Getting 1 euro 3 months from now can be viewed as:

– Getting now the promise of 1 euro 3 months from now; present-value = €1/(1 + 3k).

– Getting now the promise of getting 1 month from now the promise of getting 1 euro after a further 2 months;
present-value = €(1/(1 + k)) × (1/(1 + 2k))

Behavioral Economics; Costs of Delay

◆ Getting 1 euro 3 months from now can be viewed as:

   – Getting now the promise of 1 euro 3 months from now; present-value = €$1/(1 + 3k)$.

   – Getting now the promise of getting 1 month from now the promise of getting 1 euro after a further 2 months; present-value = €$(1/(1 + k)) \times (1/(1 + 2k)) <$ €$1/(1 + 3k)$.

◆ The evidence supports hyperbolic more than exponential discounting, contrary to the rational choice model's prediction.

Behavioral Economics; Self Control

◆ A closely related issue to the time consistency problem is the problem of self-control. Almost everyone faces this issue to some degree.

◆ We might vow to count our calories and eat less while standing on the bathroom scale, but our resolve can easily vanish when we sit down to a nice meal.

◆ Today you are sure you want to quit smoking cigarettes, and you do. But tomorrow you start smoking again.

◆ Your sincere New Year's resolution is to exercise regularly, but you don't.

Behavioral Economics; Self Control

◆ The rational choice model assumes that your preferences are known to you and do not alter over time.

◆ If so, then a decision you make today about future behavior should be a decision you do not change as time goes by.

Behavioral Economics; Confidence Levels

◆ Men tend to be more confident about their decisions than do women.

◆ Rational choice theory assumes that gender has no effect on decision making.

Behavioral Economics: Social Norms

◆ Think of the following game.

◆ You, and only you, will decide how to divide €1 between yourself and one other person. This will happen only once. You don't know who is the other person and the other person does not know who you are.

◆ How would you divide the €1?

Behavioral Economics: Social Norms

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◆ You, and only you, will decide how to divide €1 between yourself and one other person. This will happen only once. You don᾽t know who is the other person and other person does not know who you are.

◆ How would you divide the €1?

◆ €1? €100? €1,000,000?

Behavioral Economics: Social Norms

◆ €1? €100? €1,000,000?

◆ Strategic reasoning predicts that since the other person must take what he is given, and has no power to influence this, he will get nothing; *i.e.,* you take everything.

Behavioral Economics: Social Norms

◆ But most people give at least something to the other person. The smaller is the amount to be divided, the more likely it is to be divided equally.

Behavioral Economics: Social Norms

◆ Think of a new game.

◆ You make an offer on how to divide €1. If the other person accepts then this is how the €1 is divided. If the offer is rejected then both get nothing.

◆ How would you divide the €1?

Behavioral Economics: Social Norms

◆ Strategic reasoning predicts that you will offer at most one cent to the other, since he gets nothing if he refuses.

◆ The evidence is that most offers of about 30 cents or less are refused as "unfair." Most offers are about 40 cents and are accepted.

Behavioral Economics: Social Norms

◆ The explanation is that the other person is offended if you try to keep a large part of the €1. Also, the cost to the other of refusing the offer decreases as you keep more for yourself. You understand this and so offer close to, but less than, €½.

Behavioral Economics: Social Norms

◆ The social norm of "fair" being about a 50-50 share results in a desire by the other to punish you if you are "unfair."

Behavioral Economics: What Is Its Value?

◆ Science advances by modifying theories when evidence accumulates of inadequacies with current theories. The rational choice model is one such theory.

Behavioral Economics: What Is Its Value?

◆ The value of behavioral economics is that it points out weaknesses of the rational choice model, thereby directing economists to where improvements must be made and so increasing the usefulness of economic science.