Chapter 4
Framing and the Reversal of Preferences

Framing example

- Popcorn
  - 95% fat free (healthy)
  - 5% fat (unhealthy)

Reference point

- What world would you rather live in?

<table>
<thead>
<tr>
<th></th>
<th>You own</th>
<th>Others own</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100</td>
<td>120</td>
</tr>
<tr>
<td>B</td>
<td>80</td>
<td>60</td>
</tr>
</tbody>
</table>

Reference point

- Outcomes are defined relative to a reference point, which serves as a zero point of the value scale
  - Our status relative to others matters more than absolute wealth
  - Percent of happy people in poor countries is about the same as in rich countries
  - Why do taxi drivers drive longer hours during slow days than on busy ones? They have a daily reference point for how much they expect to earn.

Reference point

- "Our perceptual apparatus is attuned to the evaluation of changes or differences rather than to the evaluation of absolute magnitudes. When we respond to attributes of such as brightness, loudness, or temperature, the past and present context of experience defines an adaptation level, or reference point, and stimuli are perceived in relation to this reference point." (Kahneman and Tversky, 1979)

Reference point

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Evolutionary Explanations

- Our body responds more to changes and differences rather than levels
- brightness or color
Context Dependent Preference

1. Would you pay $10 for a bottle of hair shampoo in an expensive hair salon?
2. Would you pay $10 for a bottle of hair shampoo in a discount supermarket?
   - Typically, such shampoos are almost identical apart from packaging.
   - Rational choice model with full information predicts:
     - consumer would pay the lower price for shampoo
     - packaging is less important than the hair-cleaning agents.
   - Reality: many people buy the more expensive shampoo.
   - Consumers make mistakes. What kind?
   - Stores will exploit this behavior. How?

Context Dependent Preference

- Individuals use a *reference point* when making decisions
  - Example: a hamburger that normally costs $5, feels like a good deal if you were offered the same hamburger for $3. But would feel like a rip off if it normally costs $2.
- The reference point is an example of the *context* of a choice problem
- Choices that depend on the context of the choice problem, are *context dependent*
- Rational Reasons for Context Dependent Preferences
  - The context may convey information?
  - Context creates value?

What’s it Worth to You?

You are lying on the beach on a hot day. For the last hour you have been thinking about how much you would enjoy a nice cold bottle of your favorite beer. A companion offers to bring back a beer from the only nearby place ([a fancy resort hotel] or [a small, rundown grocery store]). He asks how much you are willing to pay for it. What price do you tell him?

- Our willingness to pay should be affected only by how much we like beer
- In reality, location affects our willingness to pay
- Our expectations are framed by location

Loss Aversion

- Bet on a coin toss
  - Heads you lose $100
  - Tails you win $X
- How big does X have to be for you to take the bet?
  - The pain of a $100 loss is larger in absolute value than the joy of $100 gain
    - Losing $100 and then finding it adds up to a net loss
  - Classical economics: no such assumption
    - Losing $100 and then finding it adds up to zero change
  - “A salient characteristic of attitude to changes in welfare is that losses loom larger than gains.” (Kahneman & Tversky, 1979)

Loss aversion evidence

- In 2009, German billionaire Adolf Merckle committed suicide by jumping in front of a train. He was distressed over financial losses. His net worth was still in the billions.

- Investors hold stocks that have lost value (relative to purchase price) for too long, while selling rising stocks quickly
Neither gains nor losses are additive

Which pain is larger?
- A. Loss of $20
- B. Loss of $10 and loss of $10

Which pleasure is larger?
- A. $20 windfall
- B. $10 windfall and $10 windfall

Option B perceived as larger loss/gain

Risk aversion

Choose your preferred option:
A. get $10 million for sure
B. flip a coin, get $22 million for heads, 0 for tails

Expected value of B = $11 million = 0.5*22 + 0.5*0
Risk aversion: preference for a certain gain over a risky option

The Asian Disease Problem

United States is preparing for the outbreak of an unusual Asian disease that is expected to kill 600 people. Two alternative programs to combat the disease have been proposed.

Program A: If Program A is adopted, 200 people will be saved.

Program B: If Program B is adopted, there is a 1/3 probability that 600 people will be saved and a 2/3 probability that no people will be saved.

Which of the two programs would you favor?
Because people are risk averse, they favor Program A.

Asian Disease Problem

United States is preparing for the outbreak of an unusual Asian disease that is expected to kill 600 people. Two alternative programs to combat the disease have been proposed.

Program C: If Program C is adopted, 400 people will die.

Program D: If Program D is adopted, there is a 1/3 probability that no one will die and a 2/3 probability that 600 people will die.

These options are identical to Programs A and B
Most people select Program D, risk-seeking option
The wording of a problem (framing) can have a dramatic impact on preferences.

Lawsuit

You are being sued for $500,000 and estimate that you have a 50% chance of losing the case in court (expected value = -$250,000).
The other side is willing to accept an out-of-court settlement of $240,000 (expected value = -$240,000).Ignoring attorney’s fees, court costs & aggravation, would you (a) fight the case, or (b) settle out of court?

- An expected-value decision rule would lead you to settle out of court.
- Most people are risk-seeking for losses.

Framing and the Irrationality of the Sum of Our Choices

Imagine that you face the following pair of concurrent decisions.

Decision A  Choose between:
a. a sure gain of $240
b. a 25% chance to gain $1,000 and a 75% chance to gain 0.

Decision B  Choose between:
c. a sure loss of $750
d. a 75% chance to lose $1,000 and a 25% chance to lose 0.

Most people choose a and d.
We are risk-averse for gains and risk-seeking for losses.
Framing and the Irrationality of the Sum of Our Choices

Decision C  Choose between:

  e. a 25% chance to win $240 and a 75% chance to lose $760
  f. a 25% chance to win $250 and a 75% chance to lose $750

How is this relevant for managerial decisions?

- By merely considering choices framed as gains and losses separately, we can make suboptimal decisions.
- By jointly considering choices framed as gains and losses, we can improve the quality of their decisions.
- When budgeting and funding projects, managers often make allocation decisions separately.
- Different departments of organizations frame projects differently:
  - Salespeople think in terms of acquiring corporate gains.
  - Credit offices think of decisions in terms of avoiding losses.
- Many of the decisions that occur in organizations are made sequentially or with separate frames as opposed to simultaneously. This can lead to sub-optimal decisions at an organizational level.

Framing and the Irrationality of the Sum of Our Choices

Decision A  Choose between:

  a. a sure gain of $240
  b. a 25% chance to gain $1,000 and a 75% chance to gain nothing

Decision B  Choose between:

  c. a sure loss of $750
  d. a 75% chance to lose $1,000 and a 25% chance to lose nothing

Decision C  Choose between:

  e. a 25% chance to win $240 and a 75% chance to lose $760  (a+d)
  f. a 25% chance to win $250 and a 75% chance to lose $750  (b+c)

Choice f is superior, even though consists of rejected options.

Multiple framing of the same problem

You were given 100 shares of stock in XYZ Corporation 2 years ago when the value of the stock was $20 per share. The stock has dropped to $10 per share during 2 years. The corporation is currently drilling for oil. It may turn out a big hit, the stock would go back up to $20. Or they may find nothing, the value of the stock will fall to $0. Do you want to sell your stock now for $10 per share?

• Some will frame this in terms of gains above $0
  — risk averse, will sell the stock
• Some will frame this in terms of losses from $20
  — will likely hold onto the stock out of hopes that they will break even on the stock.
• Same problem, different frame adopted, different decision

Improve your decisions

• Understand your reference point
  — Reference points can be manipulated, can be ambiguous, and an individual can adopt multiple reference points.
• Consider alternative reference points
  — Think through alternative reference points and consider how decisions change with different reference points.

Framing & decision making

- Why do traders hold onto losing stocks for too long while getting rid of winning stocks too quickly?
  - They have framed high-performing stocks as ones in which they have already earned positive returns, they are reluctant to hold onto them too long out of fear that they will eventually lose money.
  - They hold onto poorly performing stocks for too long because they are willing to take the risk that the stocks will continue to decrease in value so that they can have the opportunity to break even in the case that the stocks skyrocket in value.
Russian Roulette

Question 1
How much would you pay to remove the only bullet and reduce the likelihood of death from 1/6 (17%) to 0?

Question 2
In a game with two bullets, how much would you pay to remove one bullet and reduce the likelihood of death from 1/3 (33%) to 1/6 (17%)?

- Likelihood of death is reduced the same amount in both questions
- People are willing to pay more in question 1
- We place higher value on reducing the probability of harm to zero
- We place a high value on the creation of certainty

Perceptions of Certainty

<table>
<thead>
<tr>
<th>Which of the following options do you prefer?</th>
<th>Consider the following two-stage game. In the first stage, there is a 75% chance to end the game without winning anything and a 25% chance to move into the second stage. If you reach the second stage you have a choice between:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. a sure win of $30</td>
<td>c. a sure win of $30</td>
</tr>
<tr>
<td>b. an 80% chance to win $45</td>
<td>d. an 80% chance to win $45</td>
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- Right-most problem is equivalent to the middle problem
- Yet framing makes people reverse their preferences

Framing and selling

- Perceived certainty can be easily manipulated via framing.
- Insurance companies can frame insurance as “full protection” from natural disasters
- Insurance sale is framed as “insurance premium” versus “sure loss” to sell more
  - In reality, ‘sure loss’ (premium) against ‘expected loss’
- Insurance has negative expected value for buyer
  - Positive for insurance companies
- A vaccine could be framed as providing full protection against a strain of disease or as merely reducing the probability of contracting the disease.
  - One of these ways to frame works better

Endowment Effect

- Tendency for people to overvalue items they own
- Home owners often overvalue their houses and leave it on the market for long periods of time.
- Car owners typically market their cars for much longer than they had hoped.
- In online auctions where sellers have the opportunity to set a minimum bid price, roughly 1/3 of items are never sold.
- Experiment: participants given mugs and an opportunity to sell them & buy new. Placed a higher value on ‘own’ mugs.

Endowment Effect: Ticket example

1. You know someone who has a ticket for sale to “Hamilton” musical
  - What is the most you would be willing to pay for it?

2. You won a ticket to “Hamilton” in a lottery
  - What is the least that you would accept to sell your ticket?

Willing to pay less in problem 1 than value in problem 2 => endowment effect
Mental Accounting

Suppose that you bought a case of a good 1982 Bordeaux in the futures market for $20 a bottle. The wine now sells at auction for about $75 per bottle. You have decided to drink a bottle. Which of the following best captures your sense of the cost of your drinking this bottle?

a. $0  
b. $20  
c. $20 plus interest  
d. $75  
e. –$55 (you’re drinking a $75 bottle for which you paid $20)

Mental Accounting

• Spending is categorized into separate budgets for various types of items
  – We separate choices into different “accounts” in our heads
  – Irrational, money is money

Examples:
1. People put money into checking and savings accounts, make decisions as if the accounts were unrelated
2. $20 earned and $20 found of the floor spent differently.
3. You get an coupon for an ice cream cone. After redeeming the coupon, you drop the ice cream but figure no big loss, it was free anyway.

Example: Windfall Gains

Experiment (Arkes)
• Design: 66 students were recruited at a basketball game. Half were told they were going to be paid $5 at the end of the game, then they were asked how much they spent on concessions.
• Results: Those who were going to be paid spent more

Example: Buying Tickets

Experiment (Heath and Soll):
• Design: Would you buy a $25 theater ticket if?
  1. you had spent $50 on a sports ticket.
  2. you had been given the same sports ticket as above for free.
  3. you spent $50 on a flu vaccine
• Results: People were most likely to reject the theater ticket if they had purchased a sports ticket than if they had purchased a vaccine. Being given a sports ticket had no effect.
• What might explain their results?

Example: Income source and spending

Experiment 1 (Ely, Mak and Idsom):
• Design: How did you spend your income tax rebate check if...
  – It is called “withheld income”
  – It is called “bonus income”
• Results: 87% “spent” bonus income, 25% spent withheld income

Experiment 2 (Chambers and Spencer):
• Design: How would you spend your tax cut when...
  • You received it as a lump sum
  • You received it as a lower tax rate
• Results: Students would save 80% when it is a lump sum, but 35% when it is a lower rate
Rebate/Bonus Framing

- Framing of rebates versus bonuses can alter reference points, which has a strong effect on subsequent spending behavior.
- Federal stimulus spending
  - In September 2001, the Federal government paid $38 billion to taxpayers as a part of a stimulus “rebate” package.
  - Had the government referred to the stimulus as a “bonus”, it would have been far more effective.
- Similarly, the framing of any payments we receive at work may have similar effects on our consumption.
  - Year-end bonuses are often framed as an unanticipated gain
  - Year-end payments framed as returns to employees resulting from excess profits may be viewed as “withheld salary”

Example  Food Stamp versus Cash Payments

Since 1939 the US Supplemental Nutrition Assistance Program has provided food stamps to low income families that can only be spent on food. People who receive food stamps rather than an equivalent amount of cash wind up buying more food.

Question

- Why do economists typically believe that cash transfers would be a better policy than food stamps?

Relationship to business accounting.

- The principle of double-entry accounting is that for every credit to an account, there must be a corresponding debit
- Similarly in mental accounting, for every credit (to say the food account) there must be a corresponding debit (from the food account only)

Mental Accounts can explain:
1. How income sources affect spending
2. How individuals rationalize bad investments
3. How individuals group events to “balance” accounts.

Thought Questions

Consider a college student who gets money: earnings from a job, money gift from parents, found $50 in the pocket of old jeans, and a raise.
How does each source matter?

Experiment

- Q1: Imagine you have decided to see a play where admission is $10. As you enter the theatre you discover that you have lost a $10 bill. Would you still buy a ticket to see the play?
- Q2: Imagine you have bought a $10 ticket to see a play. As you enter the theatre you discover that you have lost the ticket. Would you buy a new ticket to see the play?

• 88% say yes to Q1 and 56% to Q2
Status Quo Bias / Default Effect

- When confronted with many alternatives, people avoid making a choice and end up with the option that is assigned as a default.
- Standard economic models assume people consider all possible options and replace inferior option with the best one.
- A default should not matter to a rational consumer.

Examples:
1. You move to a new town and are looking for lunch. You randomly pick one place. You never find another one quite as good.
2. You start a job with a health insurance benefit. The default insurer may not be the most preferred, yet many people never change.

Default effect: retirement

- Prior to April 1, 1998, the default option was nonparticipation in the retirement plan.
- After April 1, 1998, all employees were by default enrolled in 3% of salary invested in money market mutual funds.
- Only the default option changed.

Rational Explanations of Status Quo Bias
- Switching Costs

Example: Organ Donors

- Countries where people have to opt-in to organ donation have low opt-in rates (always less than 28%, the US is the highest at 28%)
- Countries where people have to opt-out of organ donation, have organ donor rates for the most part of 98%
- Experiment (Johnson and Goldstein)
- An online experiment where people were hypothetically asked if they had to either opt-out or opt-in had 82% versus 42% donation rates.

Example: Journal Subscriptions

- An organization wants to maximize membership counts and journal subscription rates. Which pricing structure is better?

1. The $45 membership fee includes subscription to 2 journals. One can add 3rd journal for an extra fee of $5.
2. The $50 membership fee includes subscription to 3 journals. One can eliminate the 3rd journal for a $5 discount.

Questions

1. How can default effect be used in programs to encourage more milk drinking in children?
2. How else can governments take advantage of default effects?
3. How can firms take advantage of these effects?