

# PART 1

## Ten Principles of Economics

### PRINCIPLES OF Microeconomics

Shizhe Peng  
School of Economics and Management  
Changsha University of Science and Technology

# What Economics Is All About

- **Scarcity**: the limited nature of society's resources
- **Economics**: the study of how society manages its scarce resources efficiently, e.g.
  - how people decide what to buy, how much to work, save, and spend
  - how firms decide how much to produce, how many workers to hire
  - how society decides how to divide its resources between national defense, consumer goods, protecting the environment, and other needs

# *Chapter 1: How people make decisions*



# Chapter 1: How People Make Decisions

- Whether we are considering the economic issues of a country or a city, or those of the entire world, economics discusses the interactions among people
- Before studying the interactions of people in social groups, it is necessary to look at the basic principles behind the decision-making process of individual humans



# Chapter 1: How People Make Decisions

- Principle 1: People Face Trade-offs
- Principle 2: The Cost of Something Is What You Give Up to Get It
- Principle 3: Rational People Think at the Margin
- Principle 4: People Respond to Incentives

# Principle 1: People Face Trade-offs

## Principle 1

## People Face Trade-offs

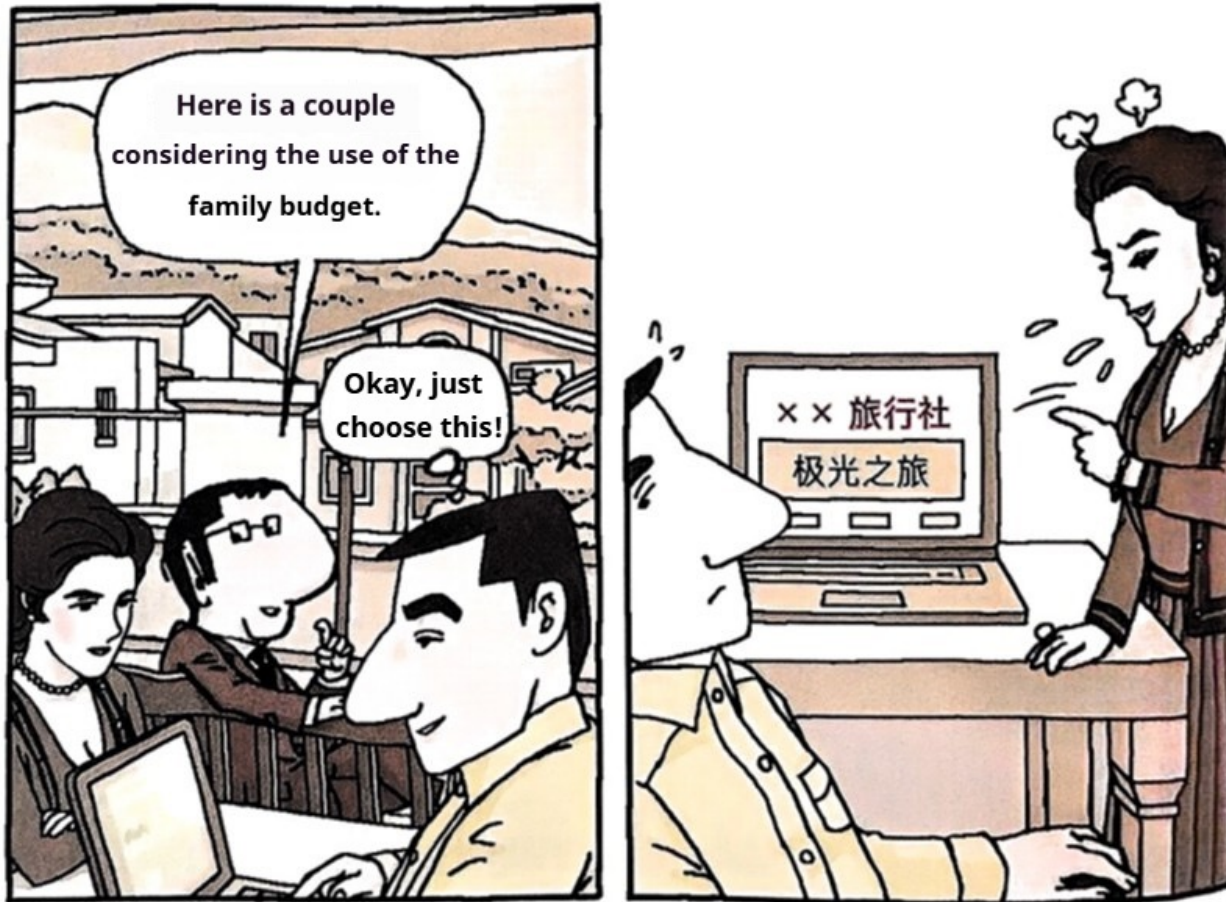




# Principle 1: People Face Trade-offs



# Principle 1: People Face Trade-offs

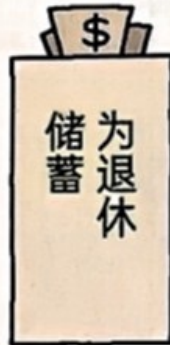
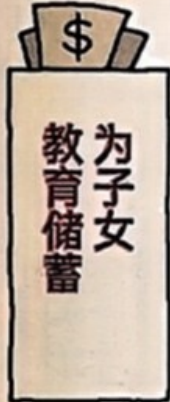




# Principle 1: People Face Trade-offs

They could also save the money.

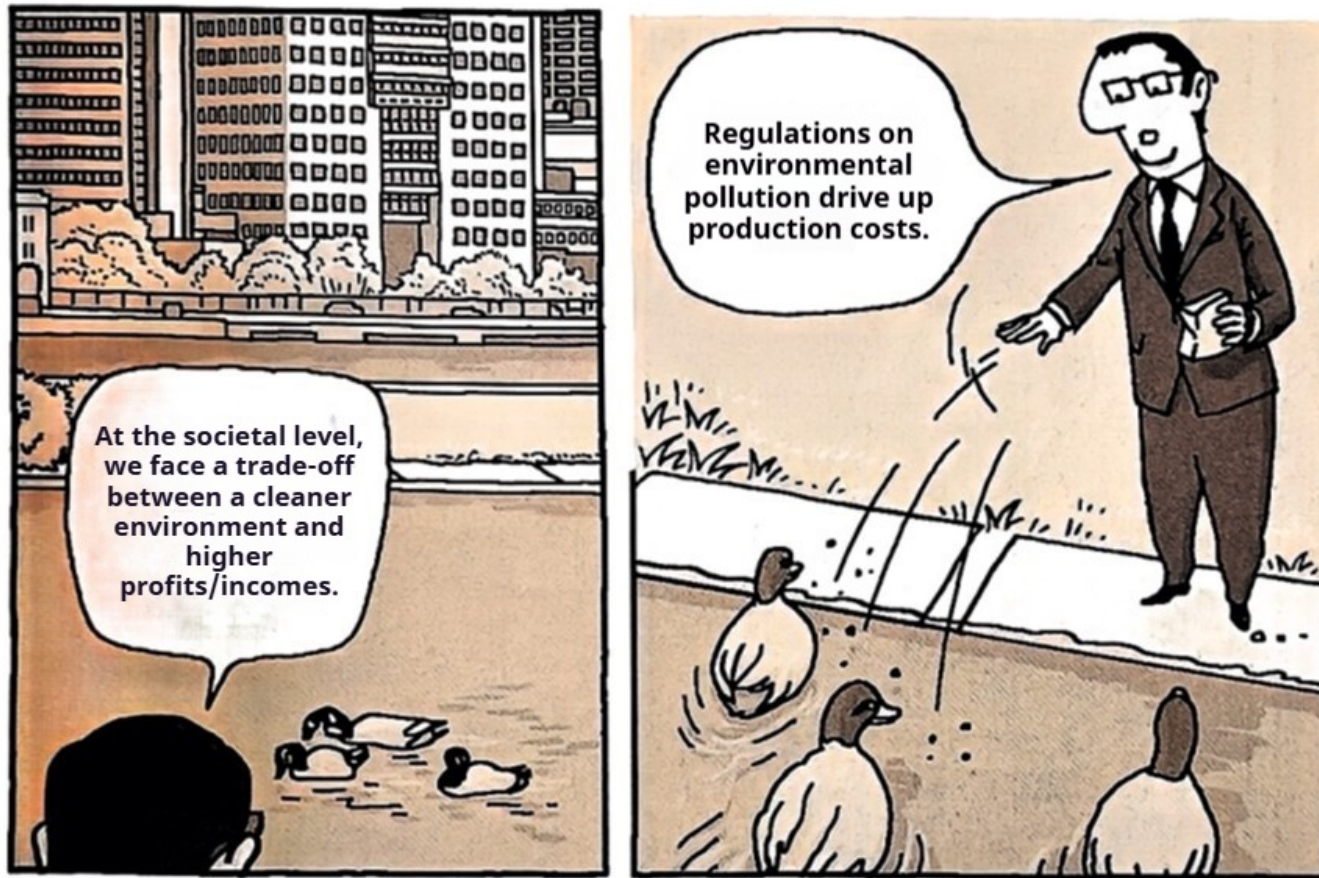
We can live to be 100 years old now!



If they spend money on one thing, they have less to spend on another.



# Principle 1: People Face Trade-offs



Environment vs. profits

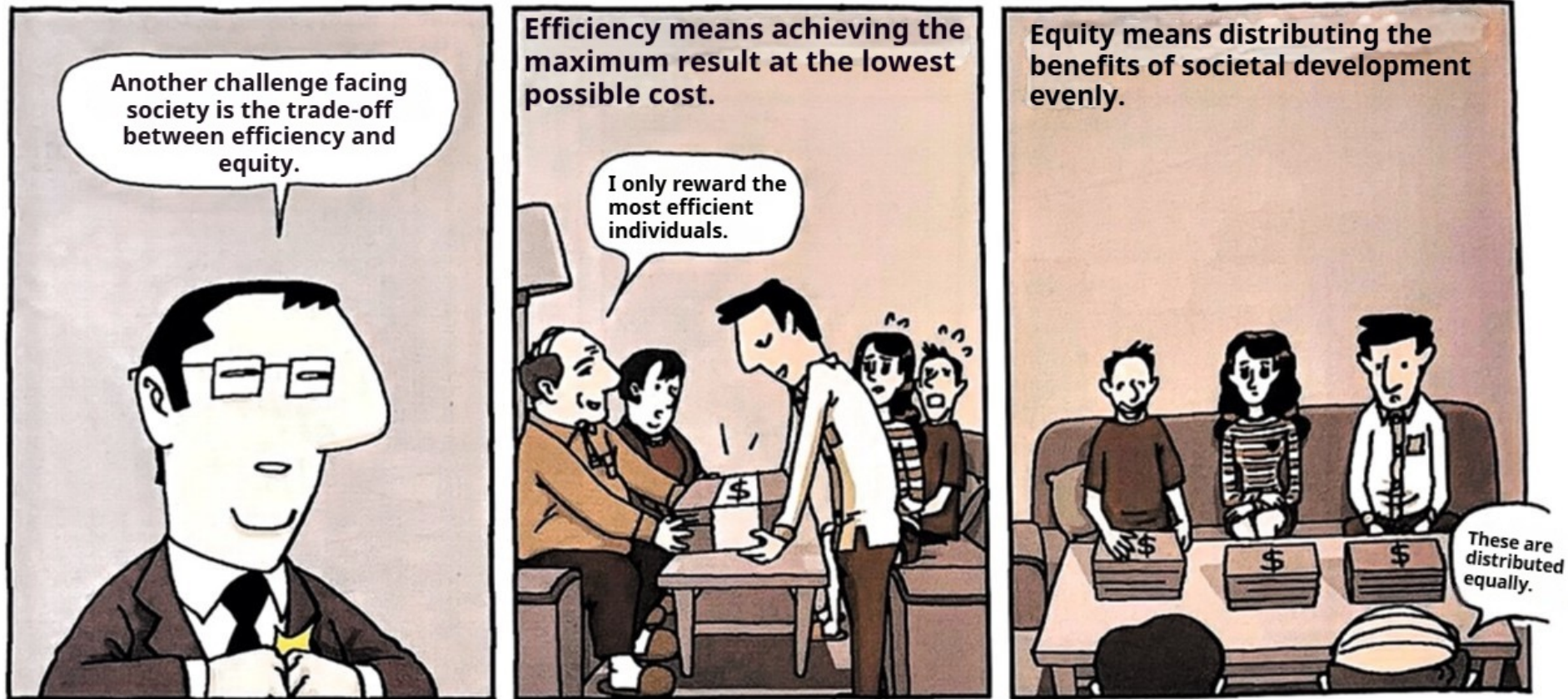
PEOPLE FACE TRADE-OFFS



# Principle 1: People Face Trade-offs



# Principle 1: People Face Trade-offs





# Principle 1: People Face Trade-offs



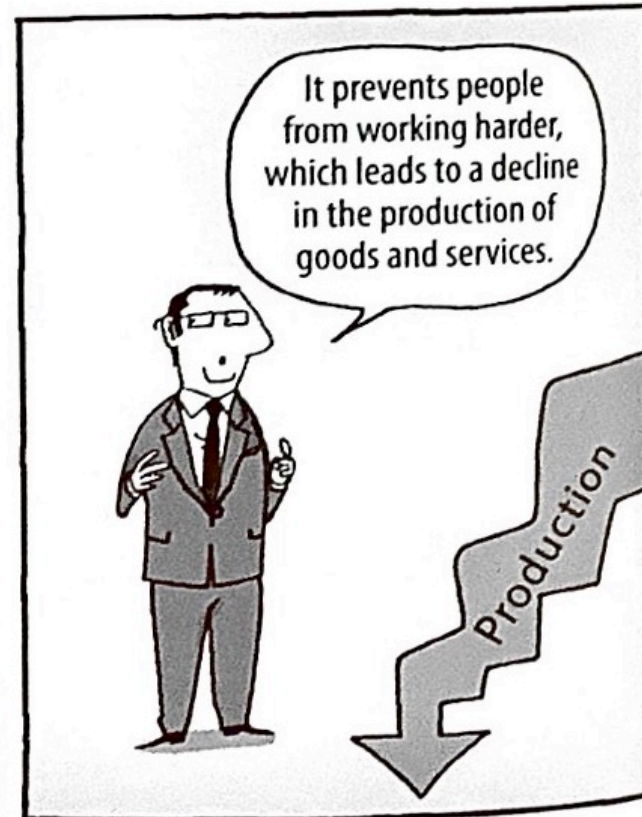
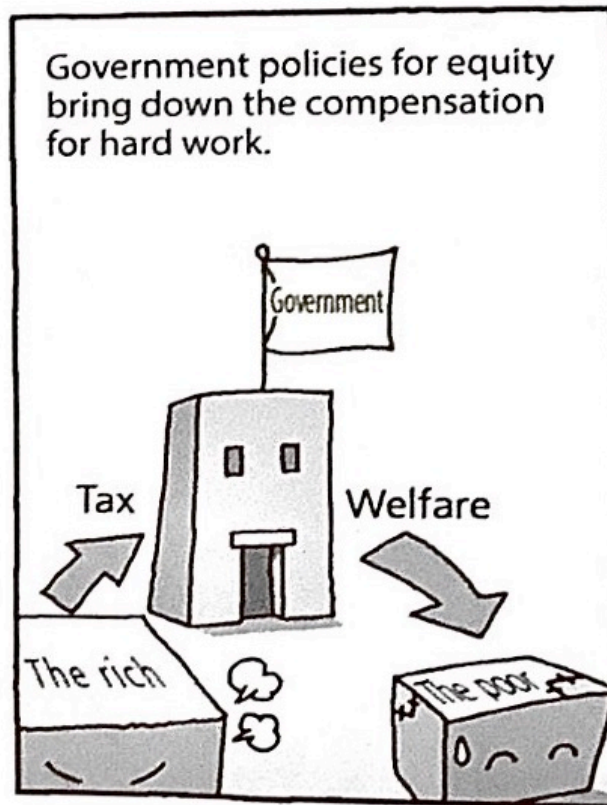
# Principle 1: People Face Trade-offs

There are systems or policies to distribute what is taken from the wealthy to the poor.

Social Welfare System

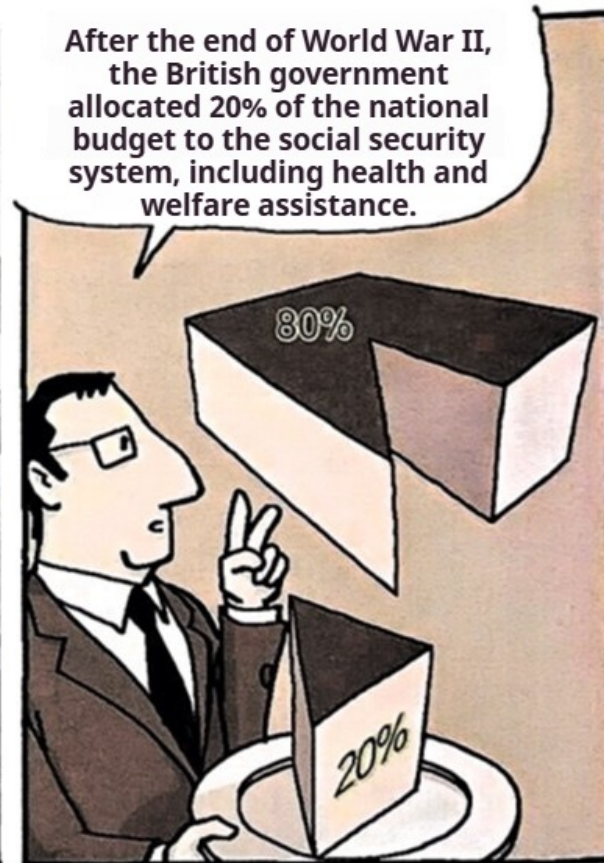
Unemployment Insurance System

Progressive Income Tax System

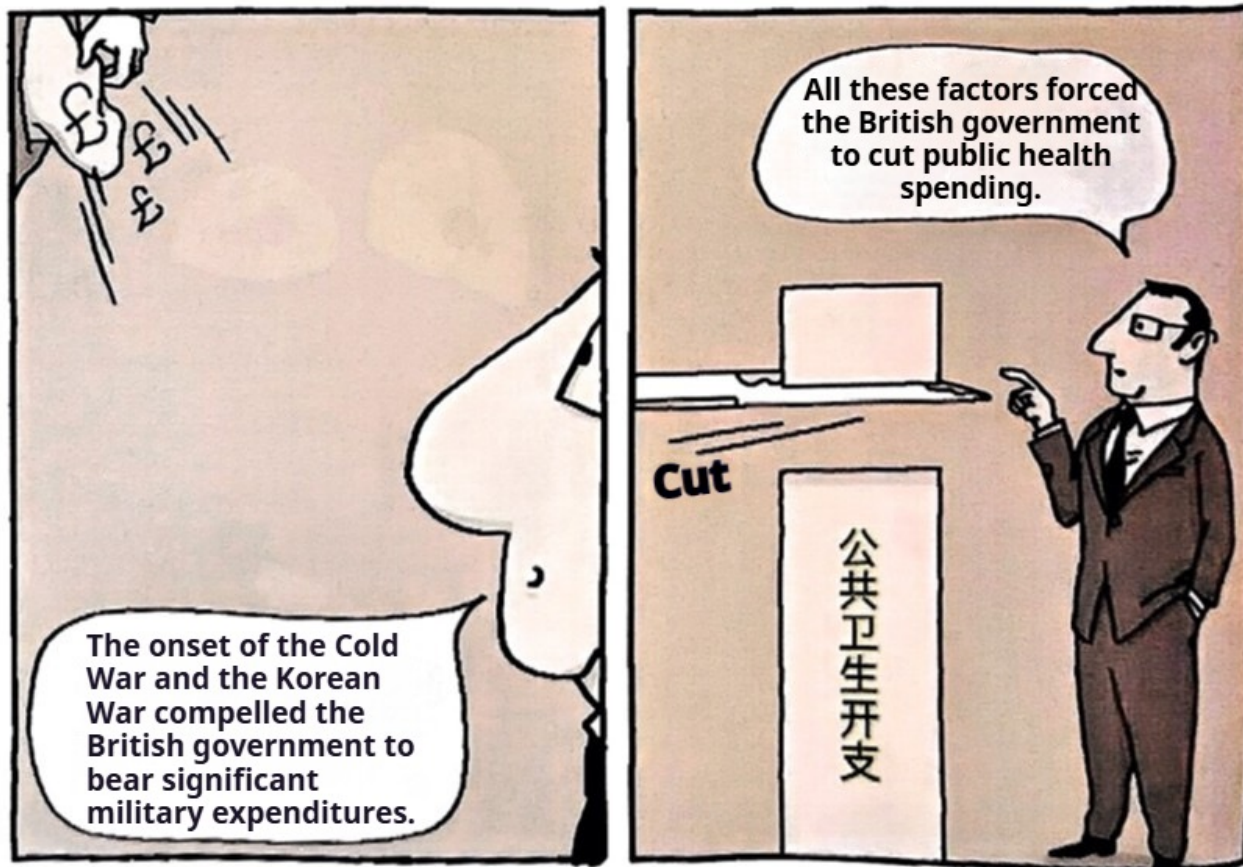




# Guns or Butter



# Guns or Butter





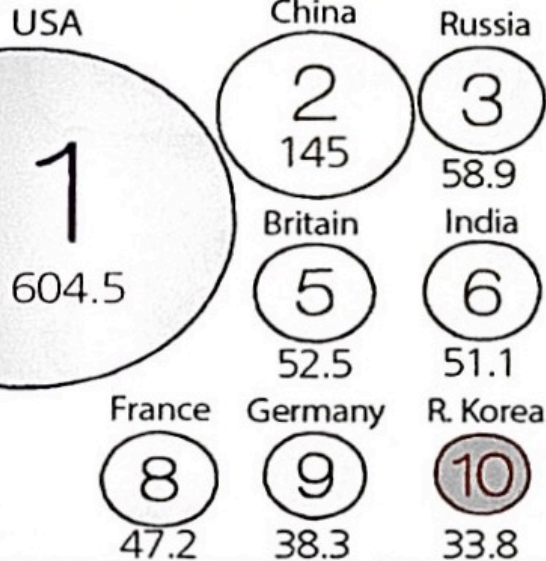
# Guns or Butter



# Guns or Butter

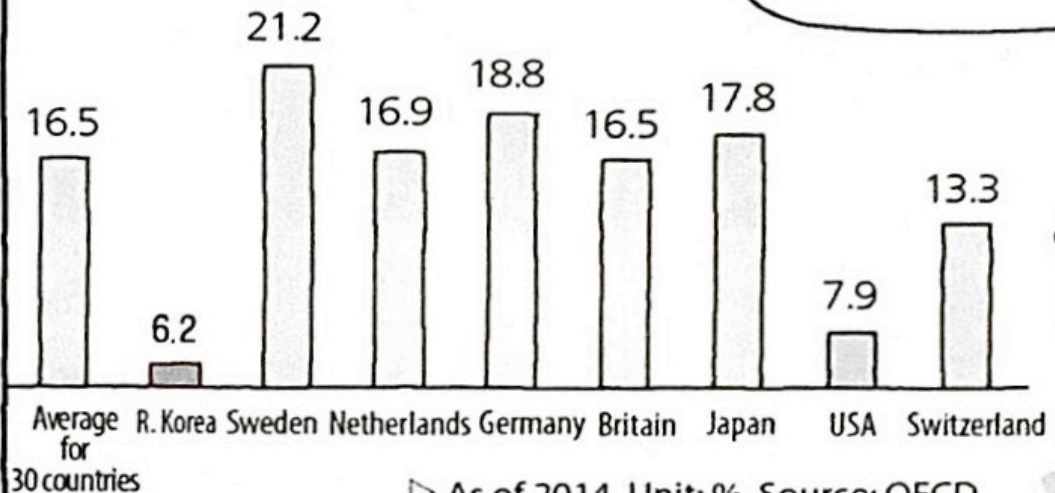
If you spend more money to protect your country...

Spending on national defense  
(in \$billions)



You will have less money for a higher standard of living (butter).

Ratio of Welfare Spending to GDP



Today, most countries find it difficult to choose between the two.



► As of 2014, Unit: %, Source: OECD

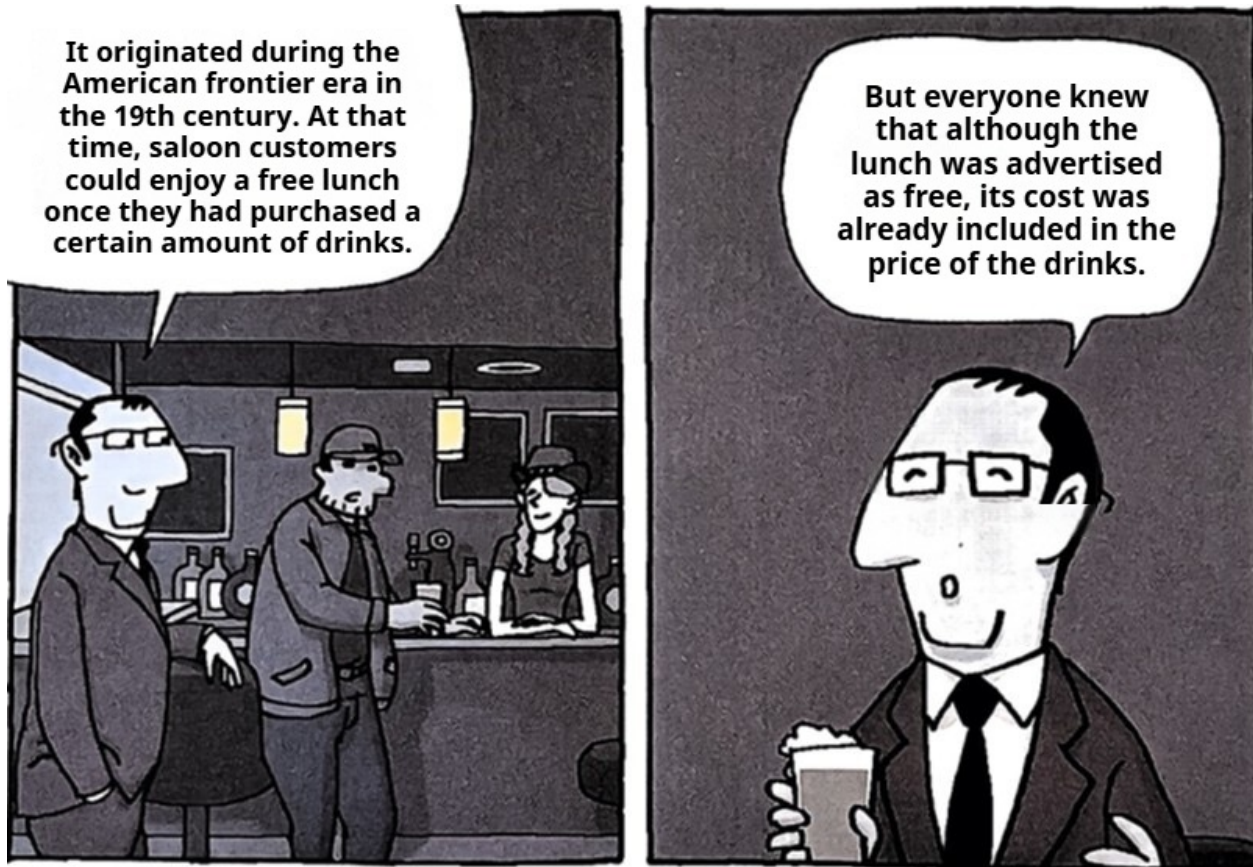
# There's no such thing as a free lunch

There's no  
such thing as  
a free lunch





# There's no such thing as a free lunch



# There's no such thing as a free lunch





# There's no such thing as a free lunch

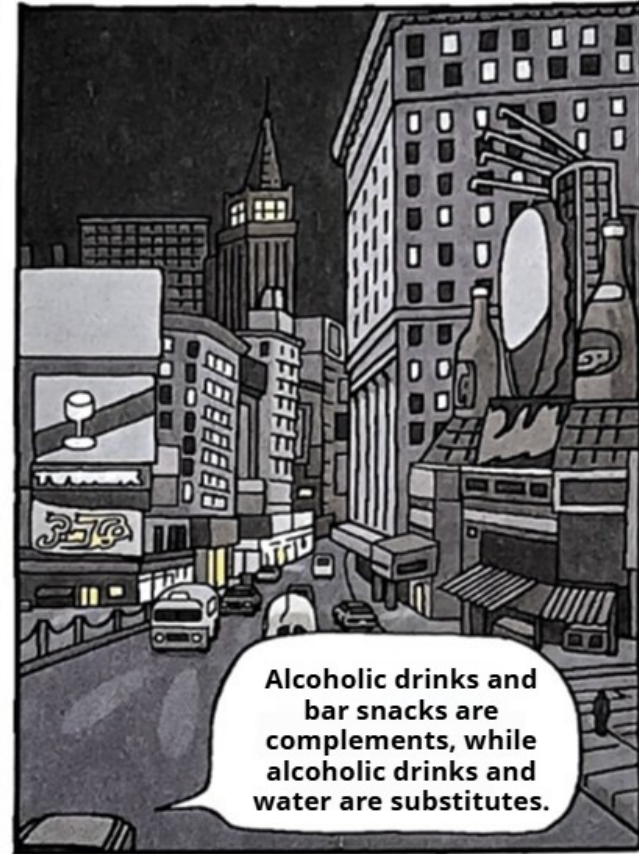
**In some bars, you are actually charged for drinking water.**



**If customers drink too much water, they are less likely to purchase expensive alcoholic drinks.**



**Alcoholic drinks and bar snacks are complements, while alcoholic drinks and water are substitutes.**



Complements (or Complementary Goods) are two goods that are used together. Substitutes (or Substitute Goods) are two goods that can be used in place of each other to satisfy a similar need.



# There's no such thing as a free lunch

Goods that enhance utility when consumed together are called complements.



Behind the 'free' label lies a bait.

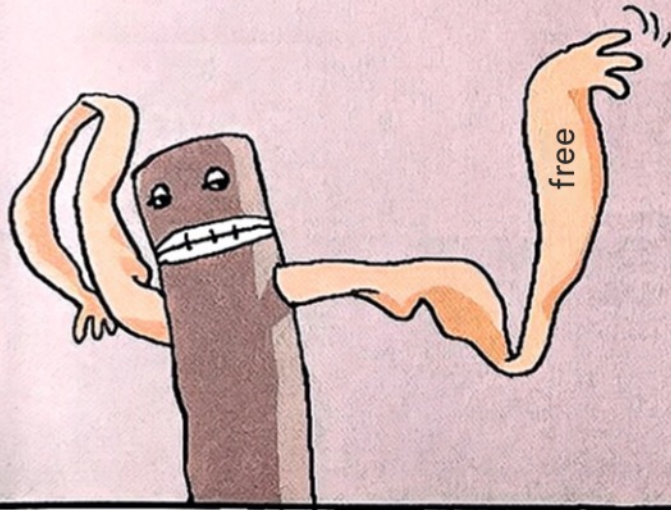


So, don't expect anything to be truly free.

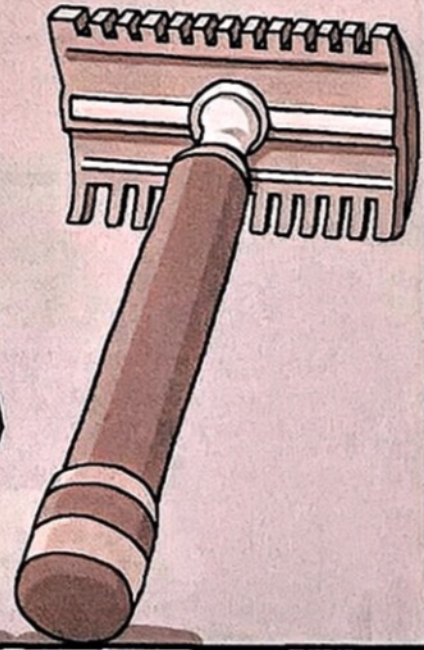
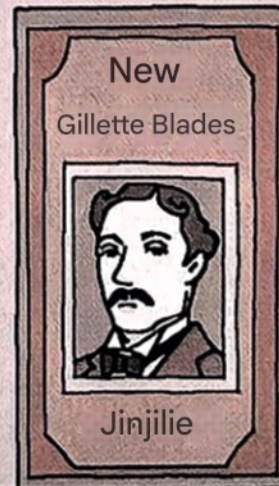


# The Economics of Free

free economics



"King Gillette invented the detachable razor during World War I, but it didn't catch on with consumers."





# The Economics of Free



# The Economics of Free





# SUMMARY



- The word "economy" comes from Greek, meaning "one who manages a household."
  - There are notable similarities between a household and an economy. Within a household, decisions must be made about what work each member does, who cooks, and who does the laundry.
  - Similarly, a society needs to make similar decisions: who will produce food, clothing, computer software, and so on.
  - The management of societal resources is important because resources are scarce. Scarcity means that society has limited resources and thus cannot produce all the goods and services people desire as they please.

# SUMMARY



- Economics is the study of how society manages its scarce resources.
  - Millions of households and businesses make individual decisions, and these decisions collectively determine the allocation of resources.
  - Economics studies how people make decisions.
  - We might as well start with the Ten Principles of Economics and use them to tie everything together.



# SUMMARY



- The first principle of economics is that "people face trade-offs."
  - As the saying goes, "There's no such thing as a free lunch." To get one thing, we have to give up something else.
  - When you spend time and money on one thing, you have less time and money to spend on others.
  - At the societal level, if you choose guns, you must give up some butter, and vice versa.

# SUMMARY



- When formulating policies, we must consider the trade-off between efficiency and equity.
  - Efficiency means achieving the greatest result at the lowest possible cost.
  - Equity refers to the fair distribution of the fruits of social development.
  - Social welfare systems, unemployment insurance, and individual income tax systems are all institutional arrangements designed to help the poor, but these systems can also reduce economic efficiency.

# Chapter 1: How People Make Decisions

- Principle 1: People Face Trade-offs
- Principle 2: The Cost of Something Is What You Give Up to Get It
- Principle 3: Rational People Think at the Margin
- Principle 4: People Respond to Incentives



## Principle 2: The Cost of Something Is What You Give Up to Get It

Principle

2

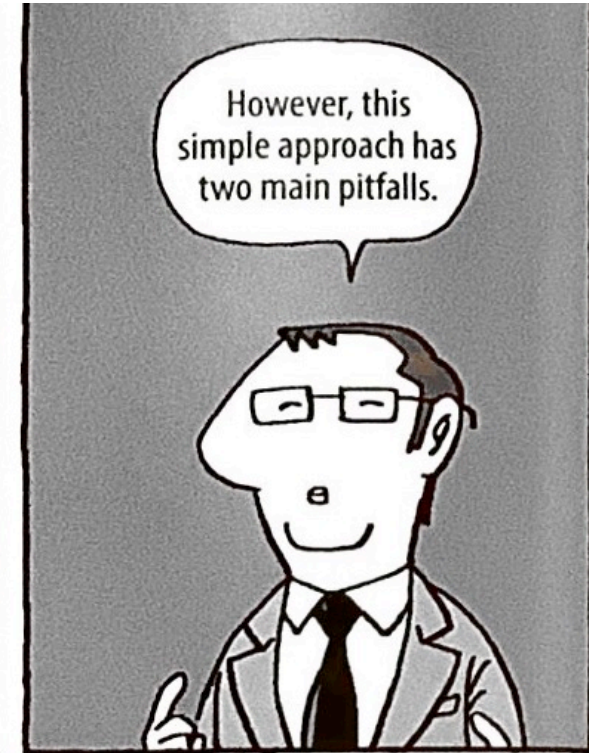
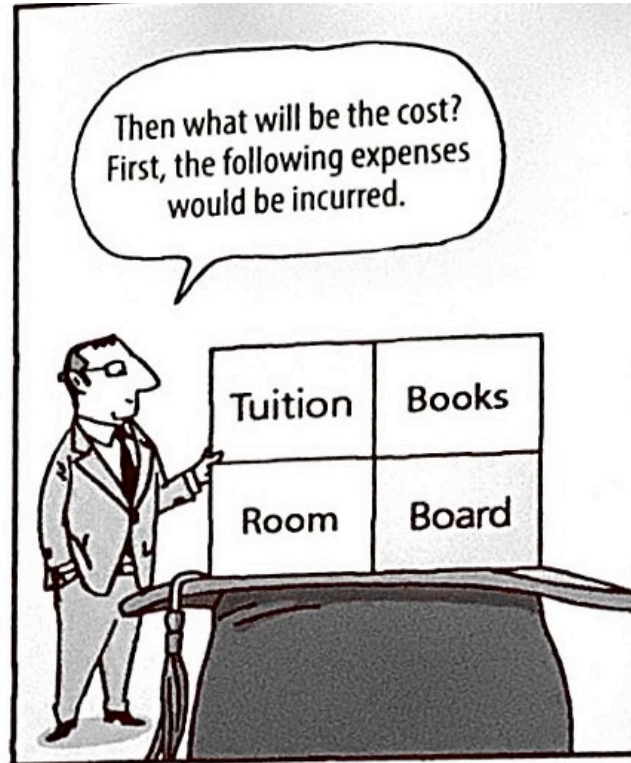
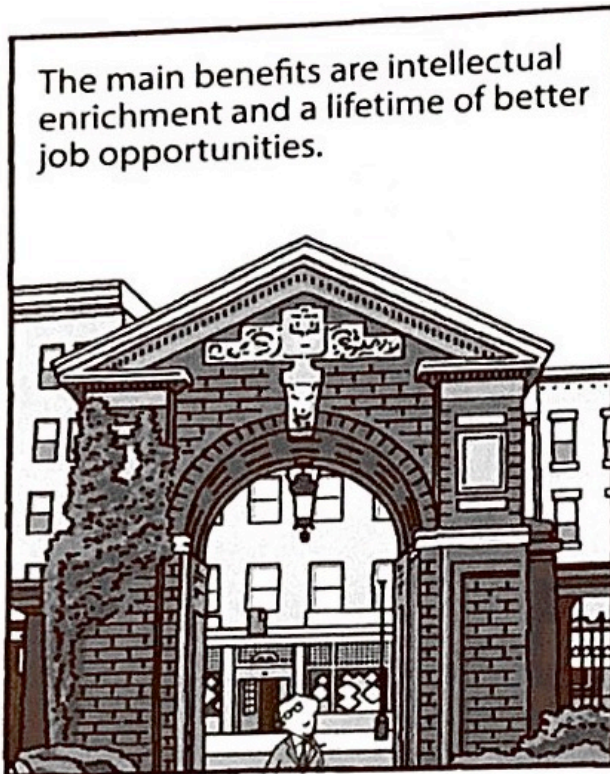
The cost of something is what you give up to get it.

We should weigh the gains and losses when deciding between alternatives,

Let's suppose that you are enrolling in a university.

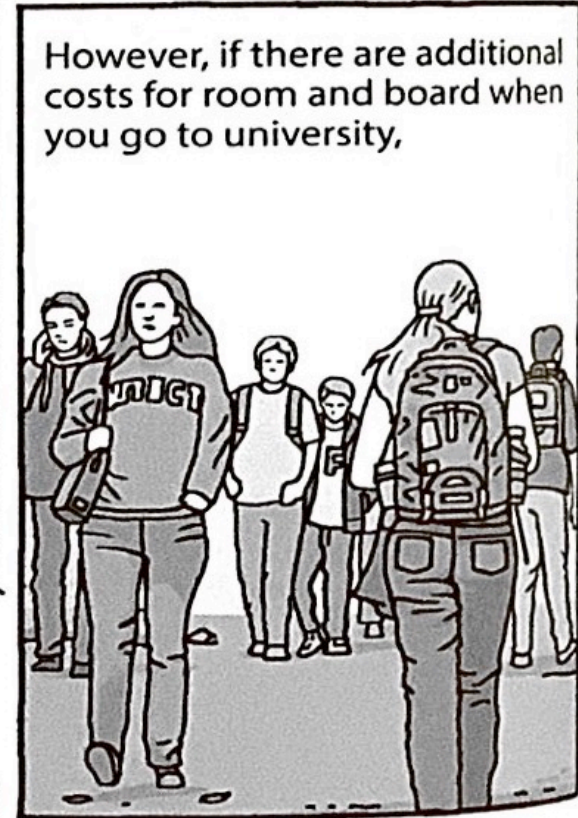
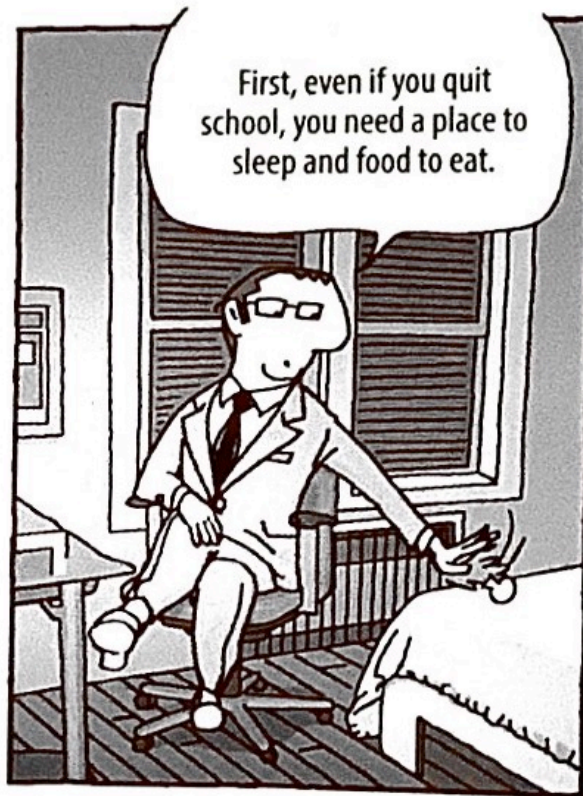
UNIVERSITY →

## Principle 2: The Cost of Something Is What You Give Up to Get It



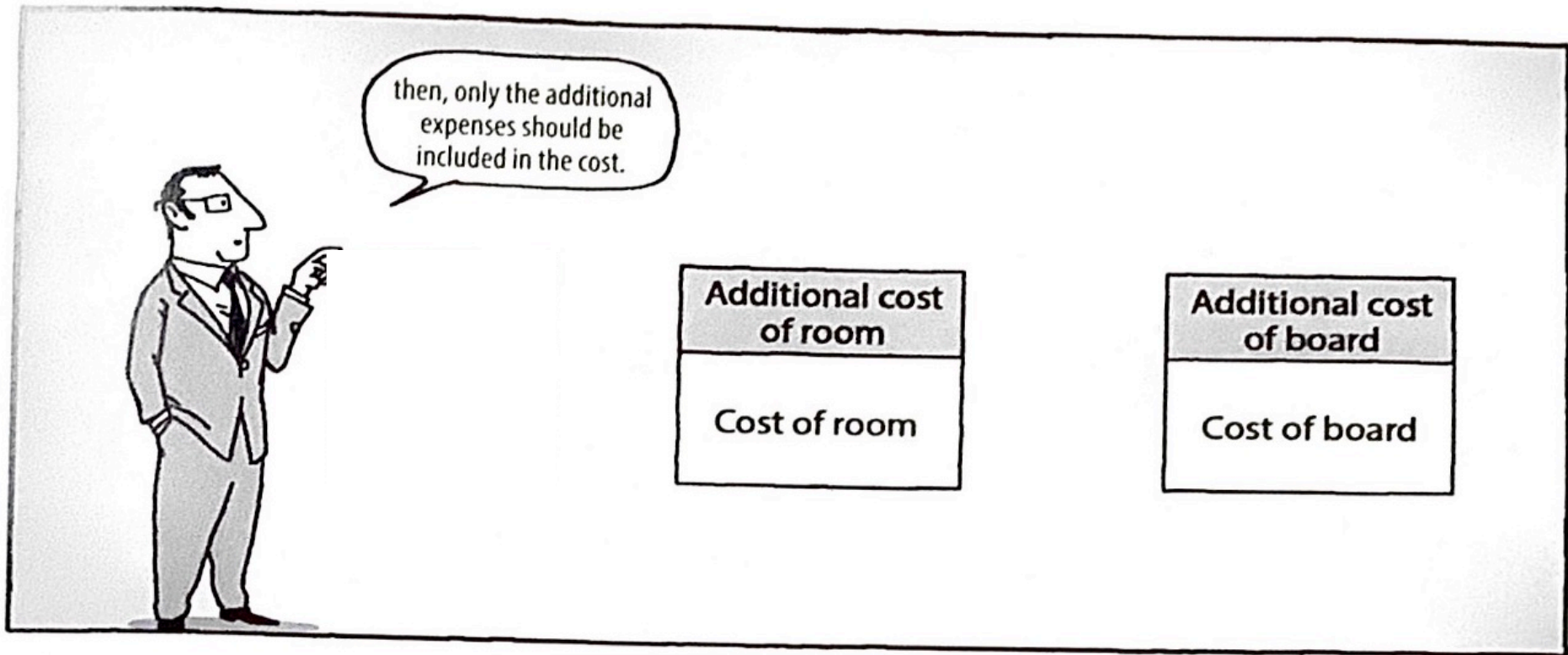


## Principle 2: The Cost of Something Is What You Give Up to Get It

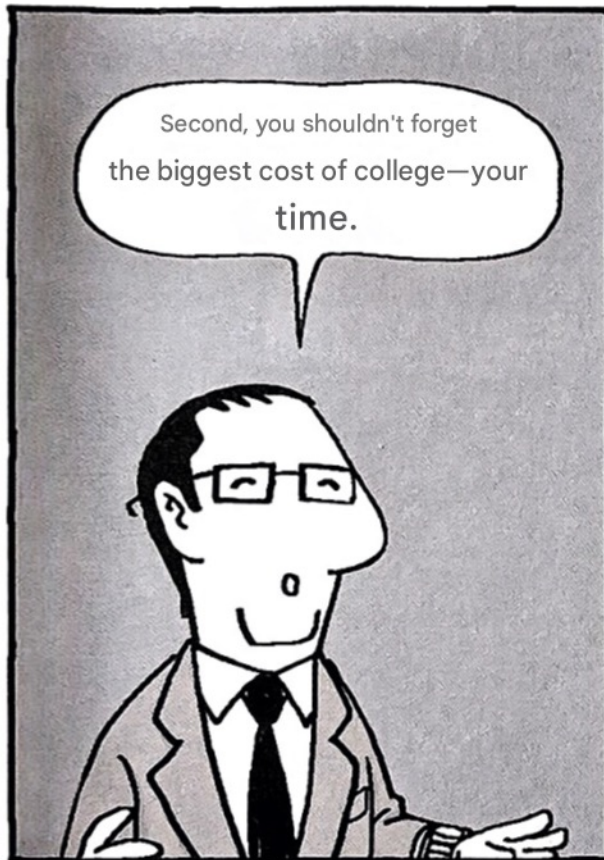




## Principle 2: The Cost of Something Is What You Give Up to Get It



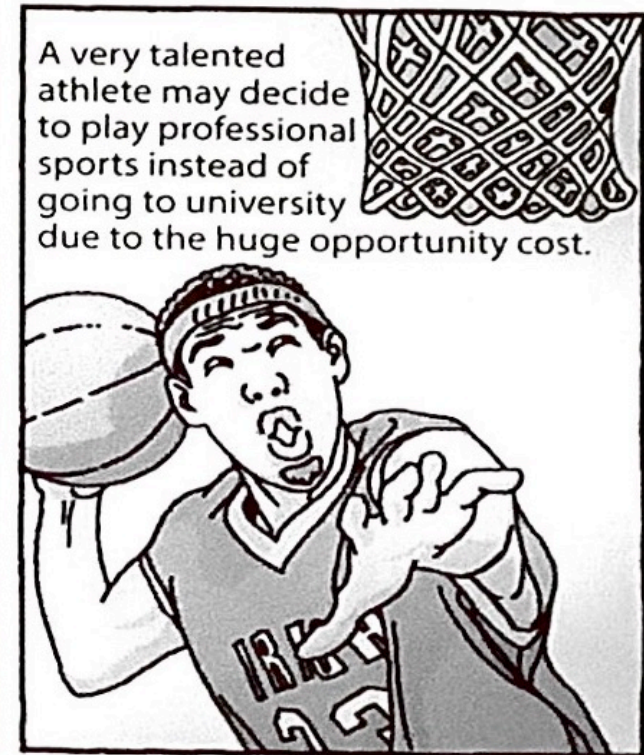
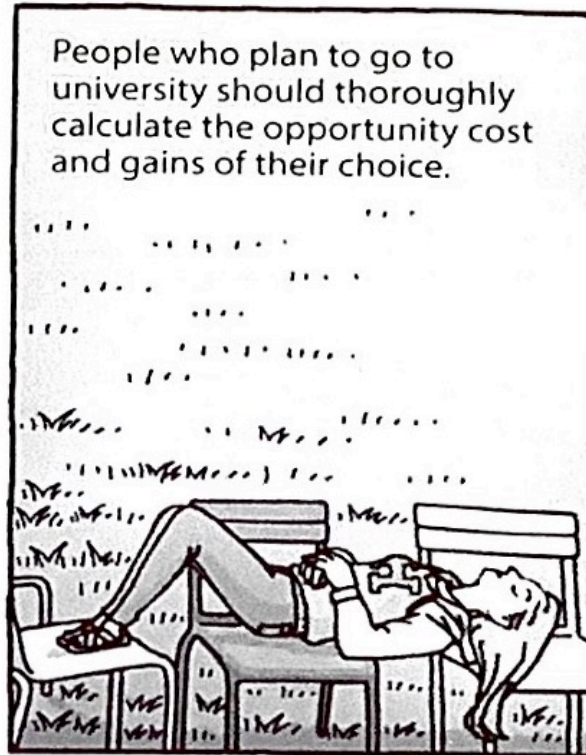
## Principle 2: The Cost of Something Is What You Give Up to Get It



You could have spent your college years working and earning money.

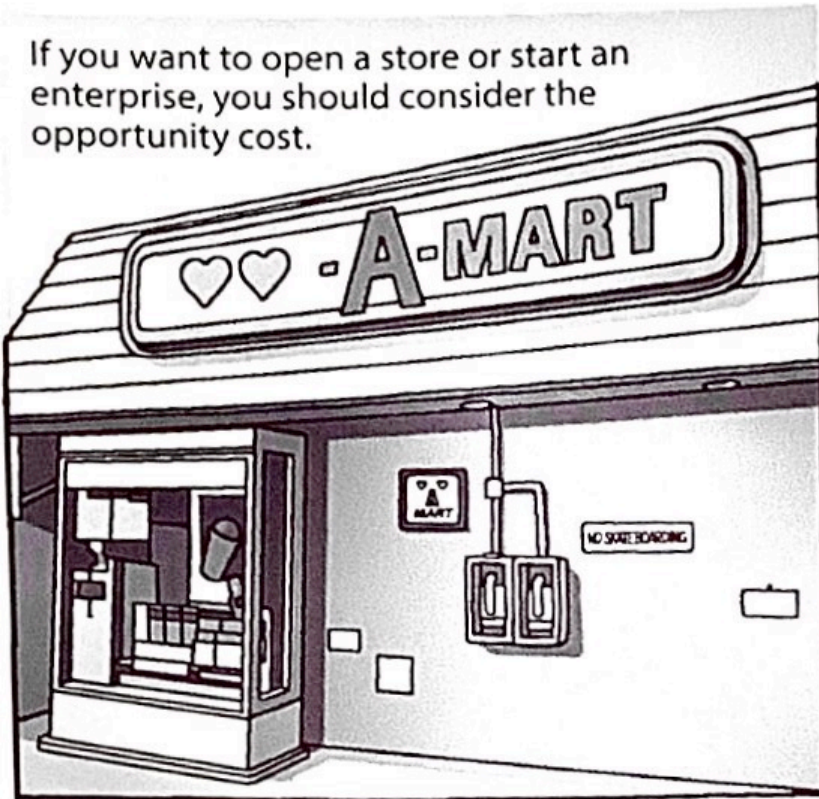


## Principle 2: The Cost of Something Is What You Give Up to Get It



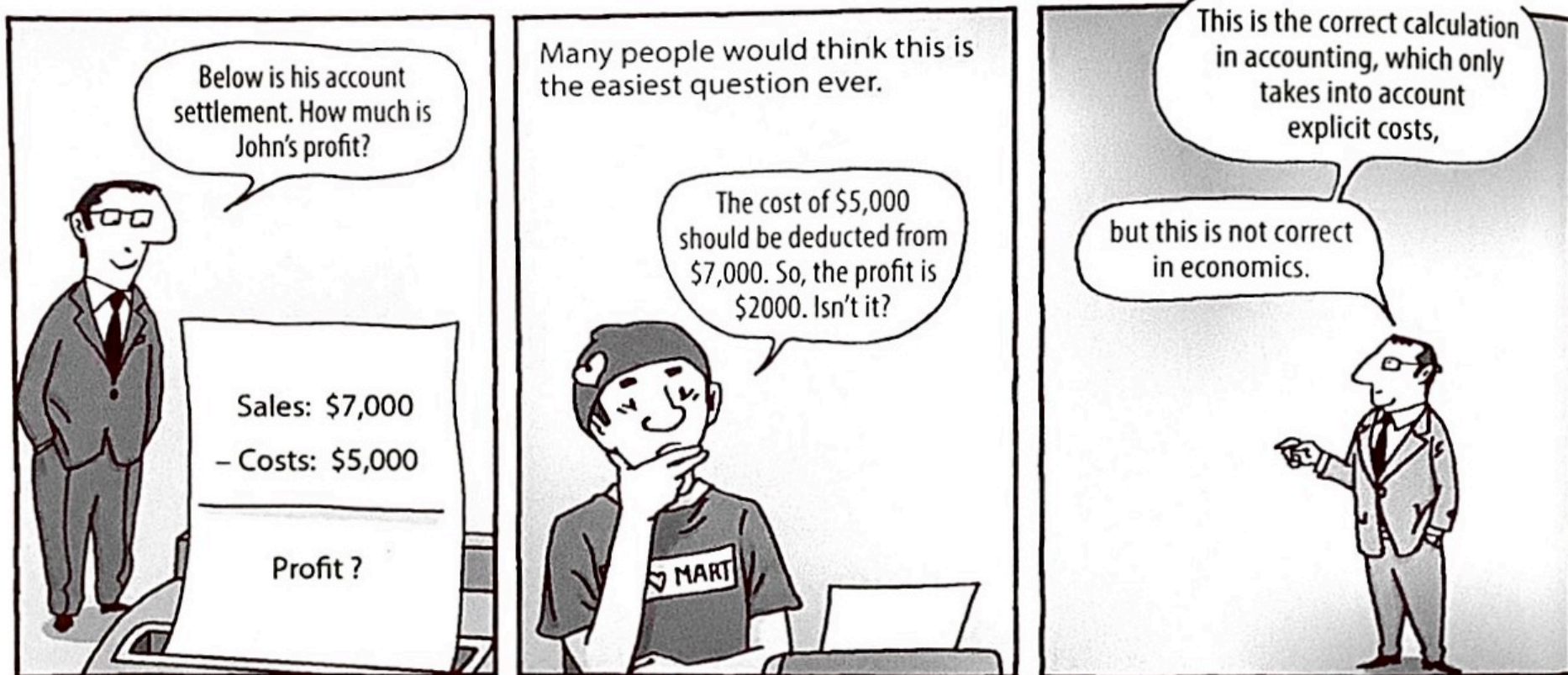


## Principle 2: The Cost of Something Is What You Give Up to Get It

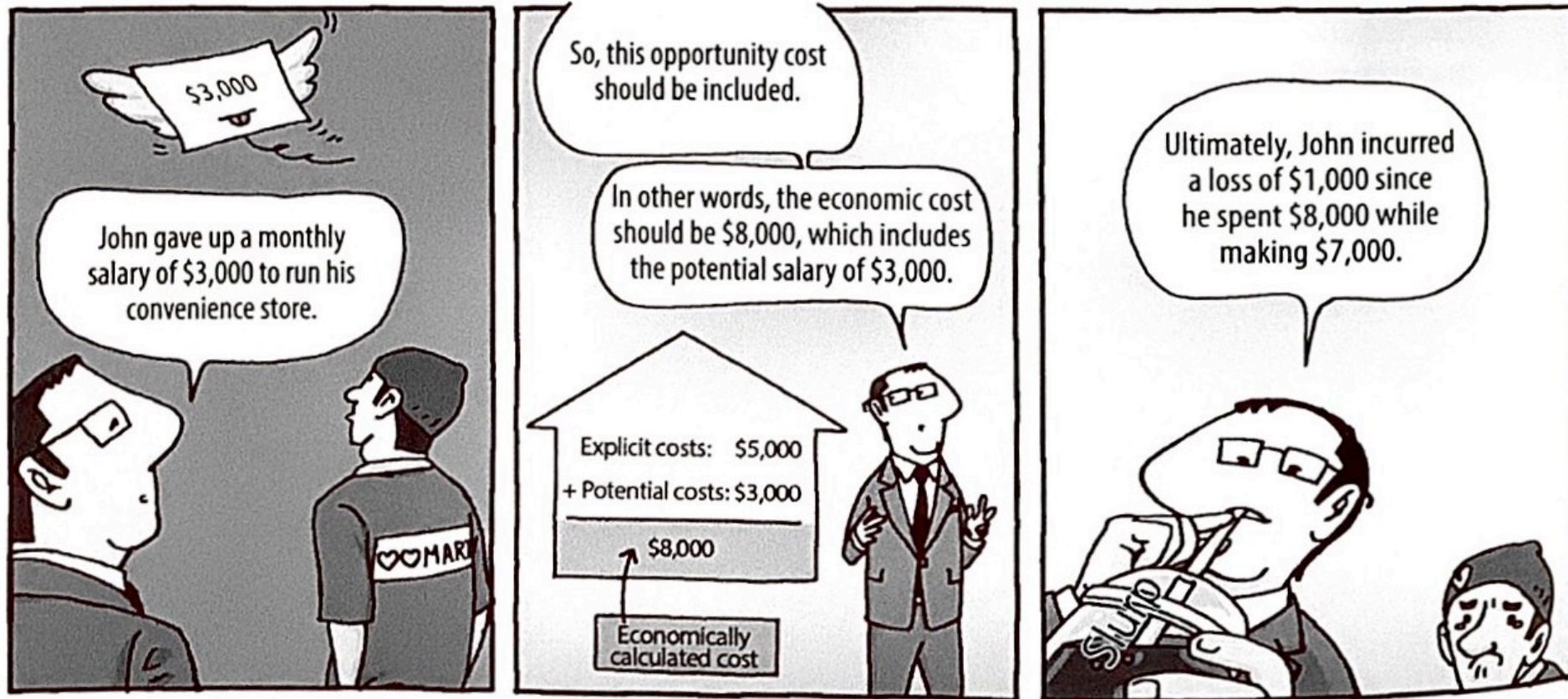




## Principle 2: The Cost of Something Is What You Give Up to Get It



## Principle 2: The Cost of Something Is What You Give Up to Get It





## Principle 2: The Cost of Something Is What You Give Up to Get It

Let's say that someone who can earn 10 shillings a day spends 6 pence loafing around, eating and drinking for half a day.

Keep in mind that the expenses are not limited to the six pence he spent.

In fact, he lost the five shillings he could have made by working. (Note: one shilling equals 12 pence)





# SUMMARY



- The second principle of economics is: "The cost of something is what you give up to get it."
- To make rational decisions, we must weigh the gains and losses of each option.
- For example, suppose you are considering whether to attend college. The benefits of college include gaining knowledge and better career opportunities. But what is the cost? You need to pay for tuition, books, meals, and accommodation. However, this simple calculation does not fully reflect the true cost of attending college.

# SUMMARY



- First misconception: Even if you don't go to college, you still need a place to live and food to eat. Therefore, basic living expenses like accommodation and meals should not be fully attributed to the cost of attending college. That said, if college accommodation and meals are more expensive, only the additional cost of these items should be counted.
- Second misconception: You cannot work while studying. Therefore, the potential income you could have earned during the time spent in college should also be considered part of the cost.

# SUMMARY



- Opportunity cost refers to everything you give up when making a choice.
- When making a decision, you should consider the opportunity cost.
- People sometimes get obsessed with explicit pros and cons while overlooking implicit gains and losses, which can lead to poor decisions. So next time you're faced with a choice, take a moment to reflect on the opportunity cost behind it.



# Chapter 1: How People Make Decisions

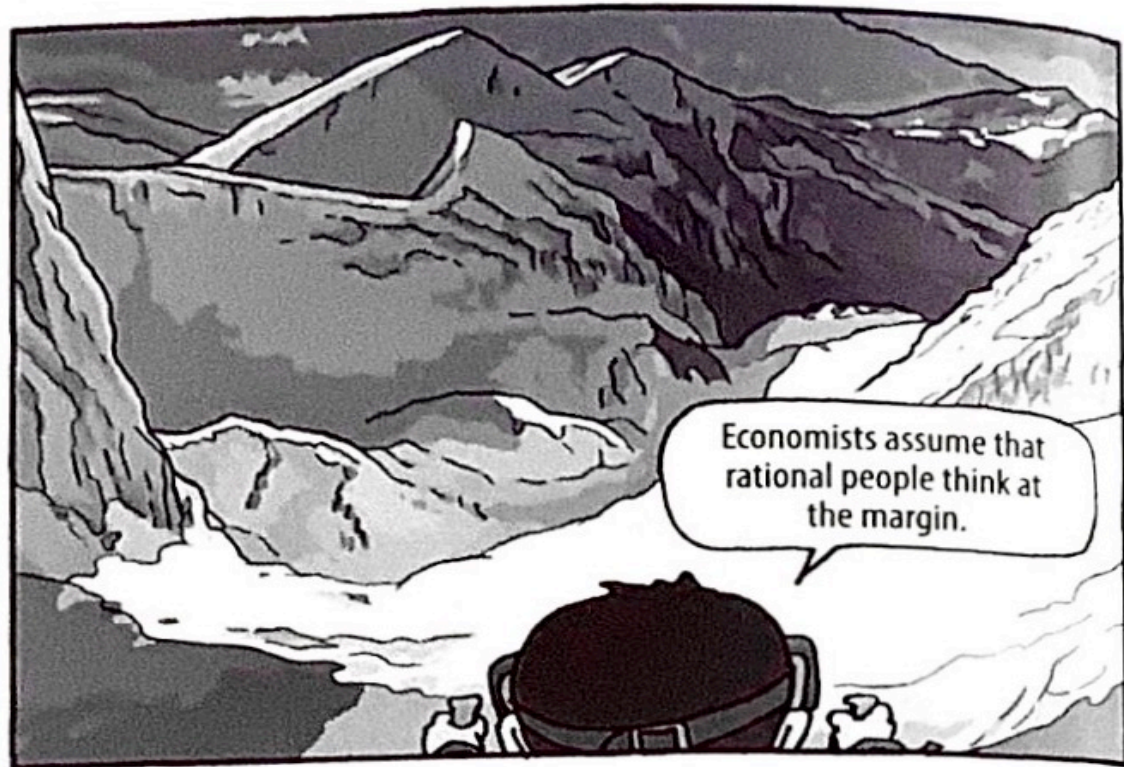
- Principle 1: People Face Trade-offs
- Principle 2: The Cost of Something Is What You Give Up to Get It
- Principle 3: Rational People Think at the Margin
- Principle 4: People Respond to Incentives

# Principle 3: Rational People Think at the Margin

Principle

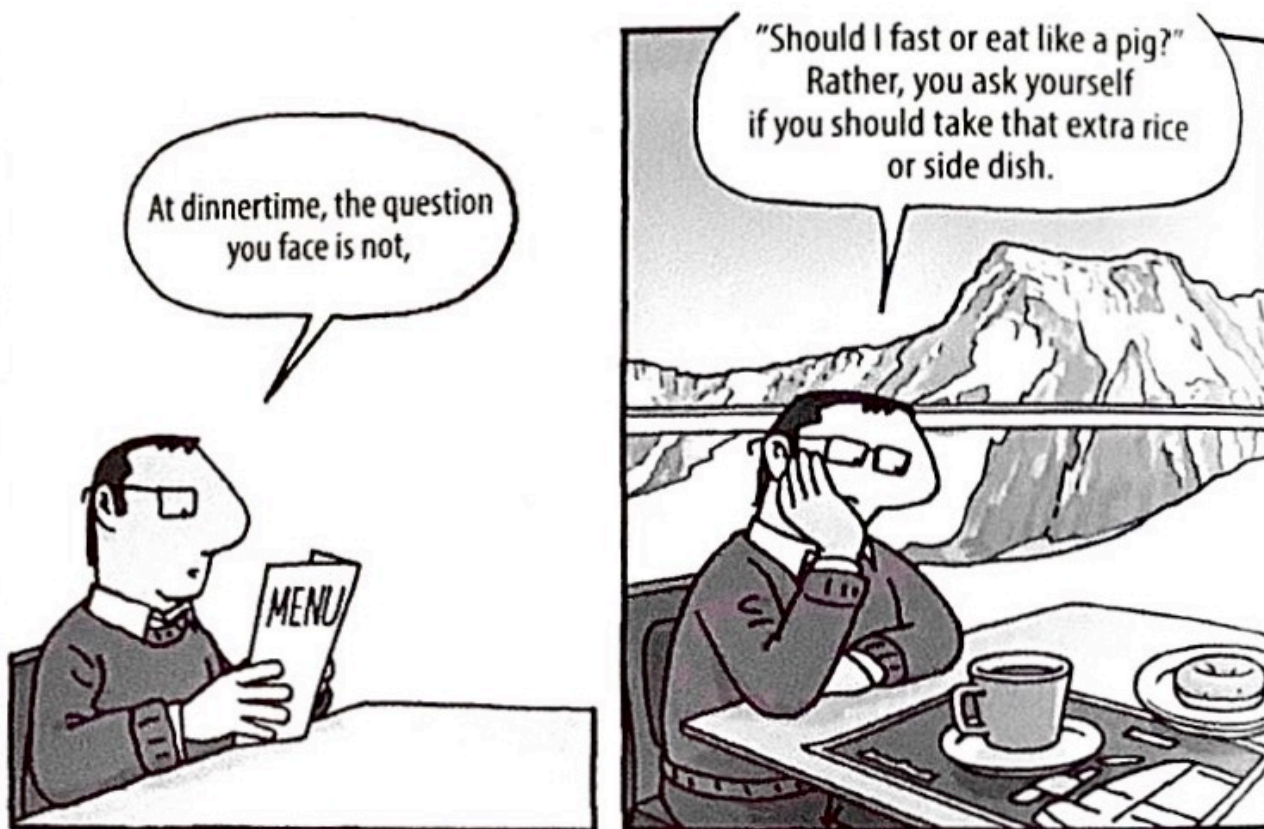
**3**

Rational people  
think at the margin.



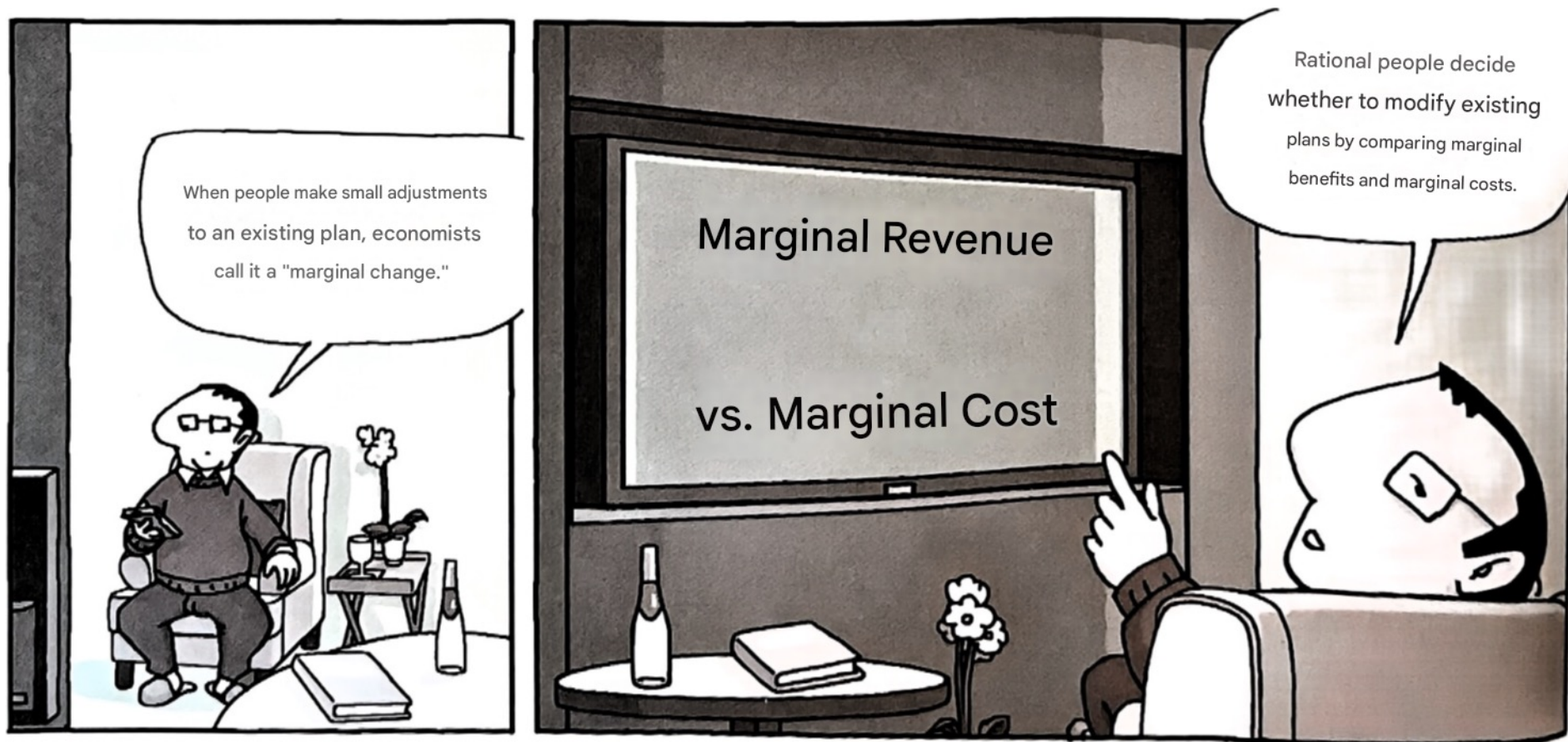
Marginal quantity refers to the additional cost and additional benefit brought about by the next small change.

# Principle 3: Rational People Think at the Margin



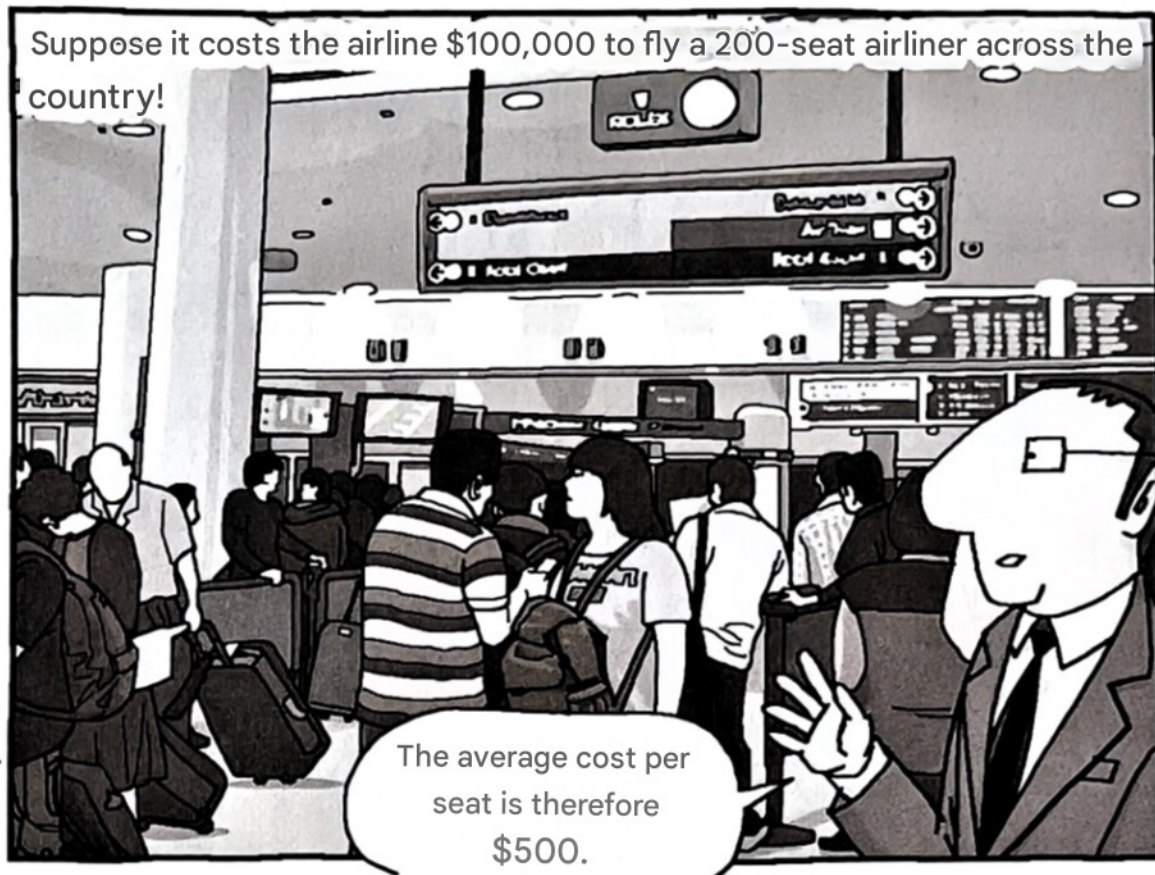


# Principle 3: Rational People Think at the Margin



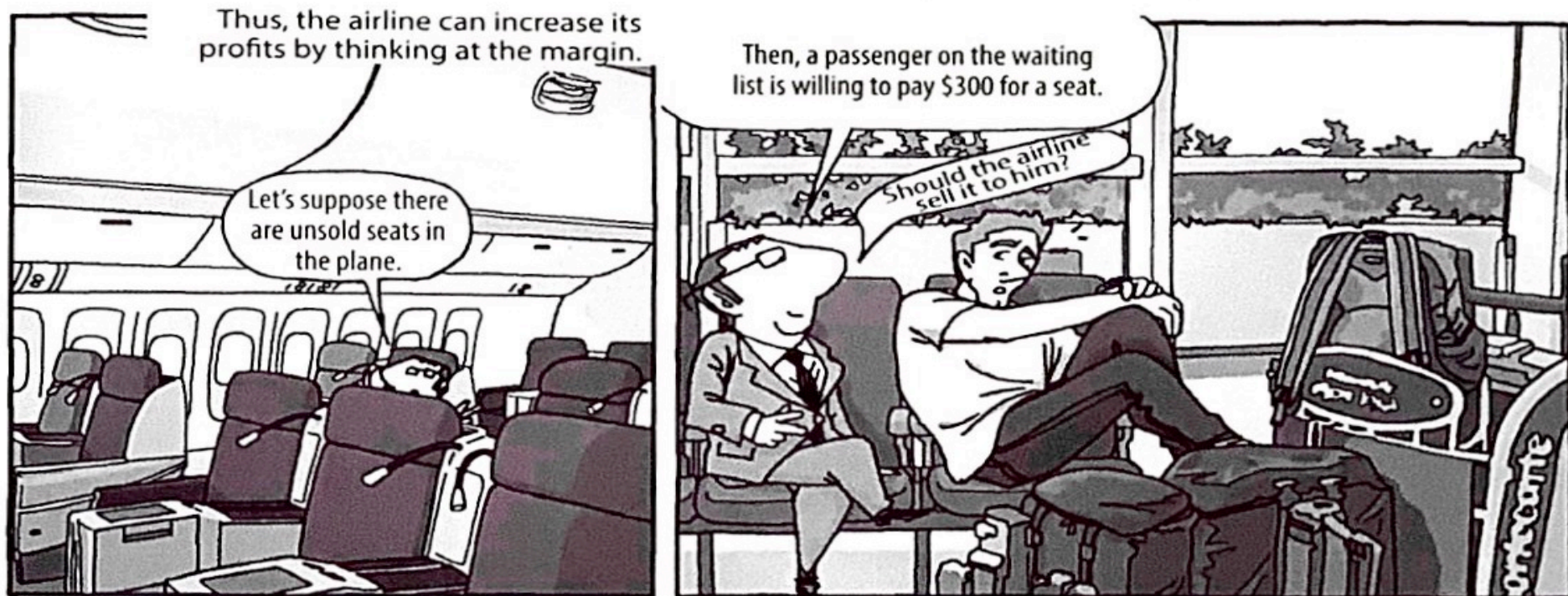
Marginal quantity refers to the additional cost and additional benefit brought about by the next small change.

# Principle 3: Rational People Think at the Margin





# Principle 3: Rational People Think at the Margin



# Principle 3: Rational People Think at the Margin

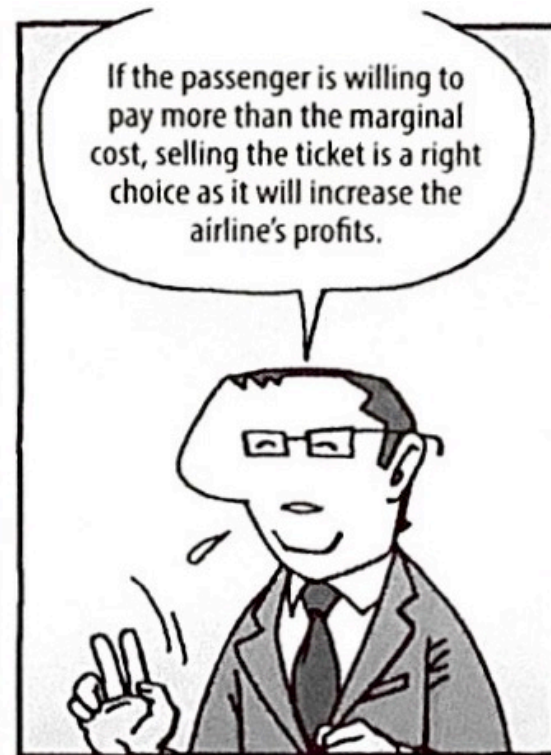
Of course, it should. Although the average cost is \$500 per passenger,



the marginal cost of taking the passenger is no more than the cost of the in-flight meal.

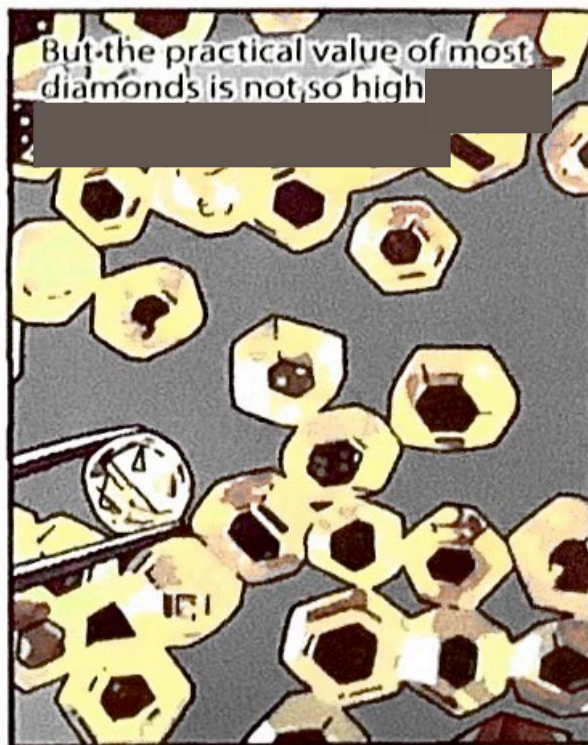
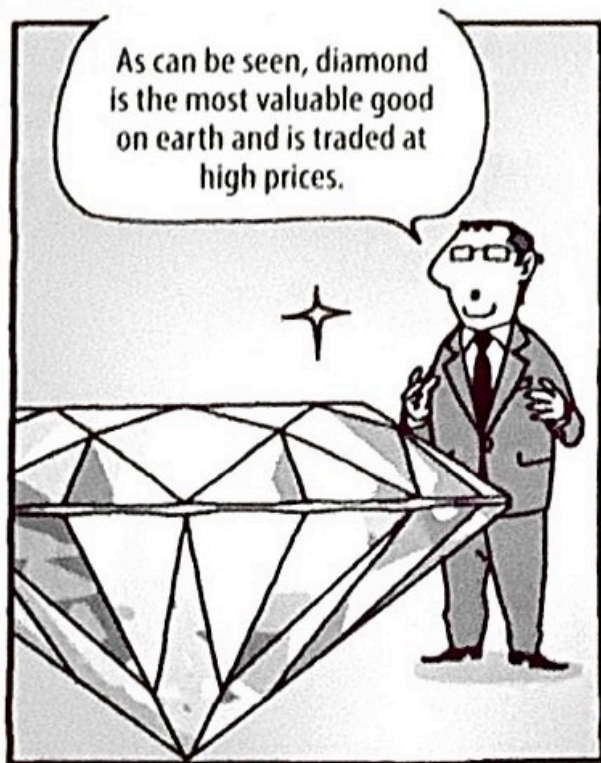


If the passenger is willing to pay more than the marginal cost, selling the ticket is a right choice as it will increase the airline's profits.





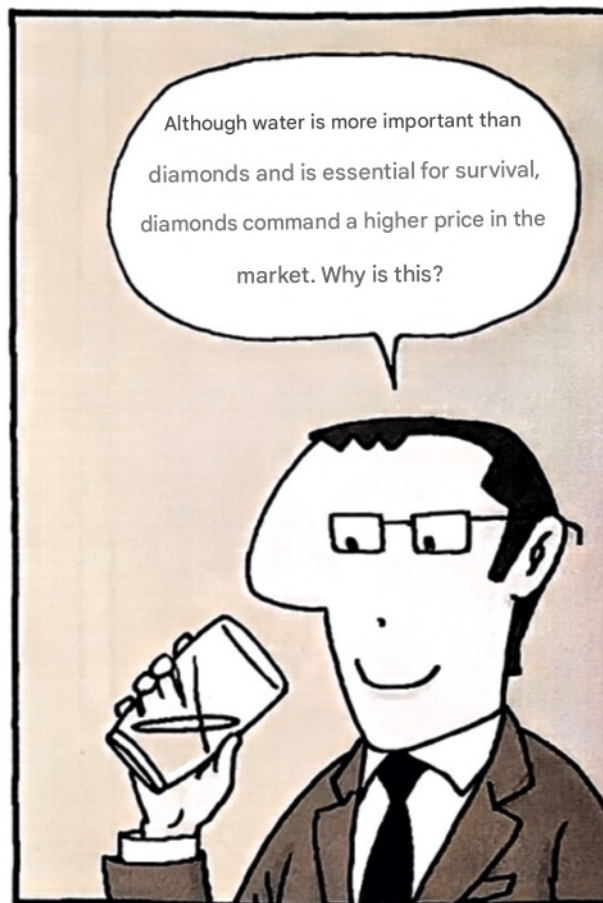
# Principle 3: Rational People Think at the Margin



However, water which is vital to life, is almost free.

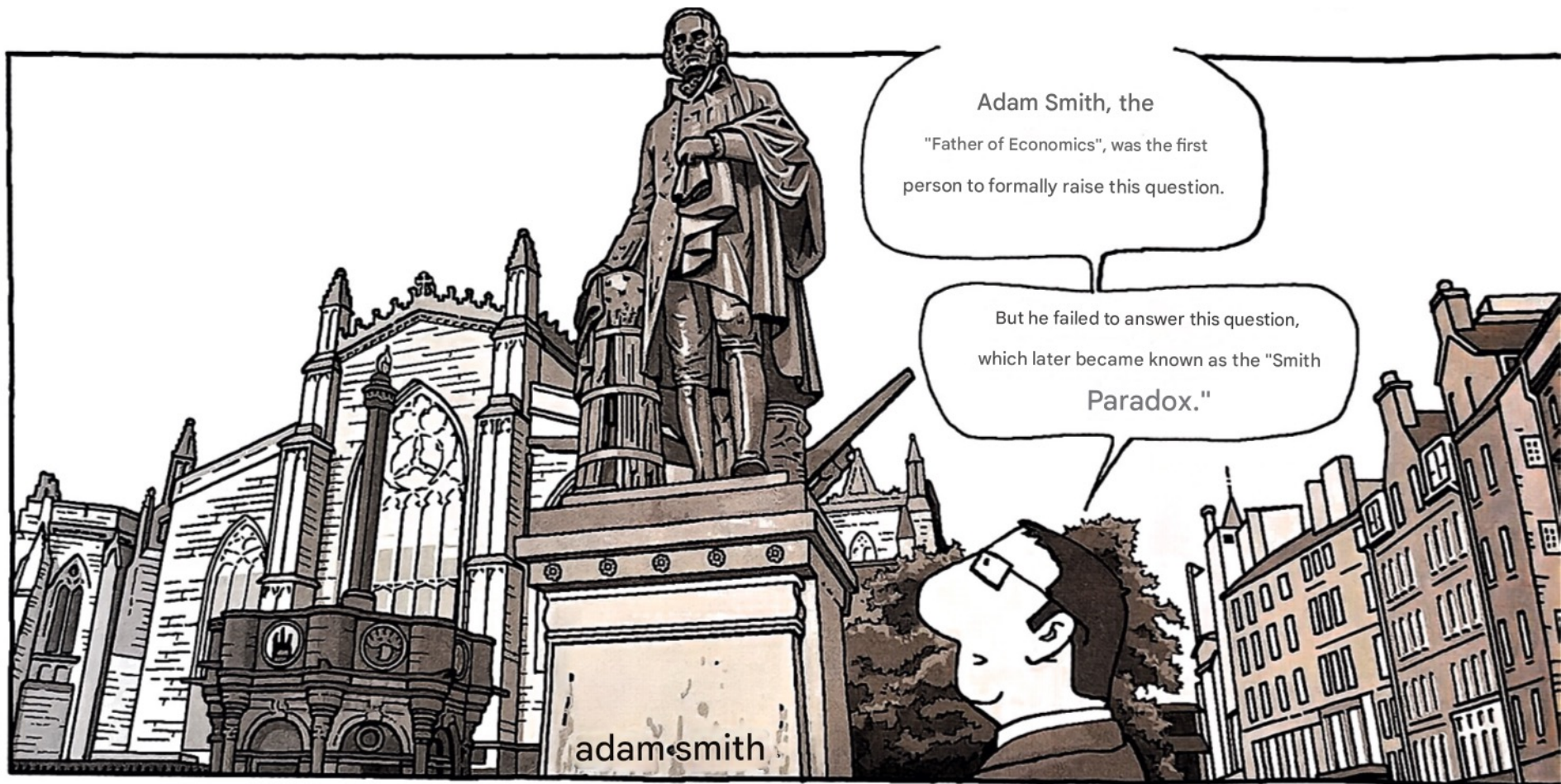


# Principle 3: Rational People Think at the Margin

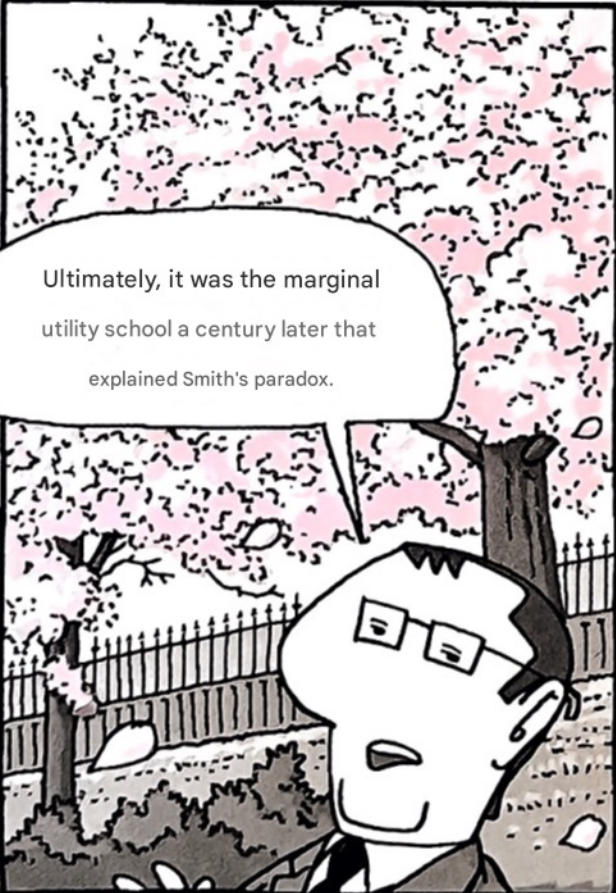




# Principle 3: Rational People Think at the Margin

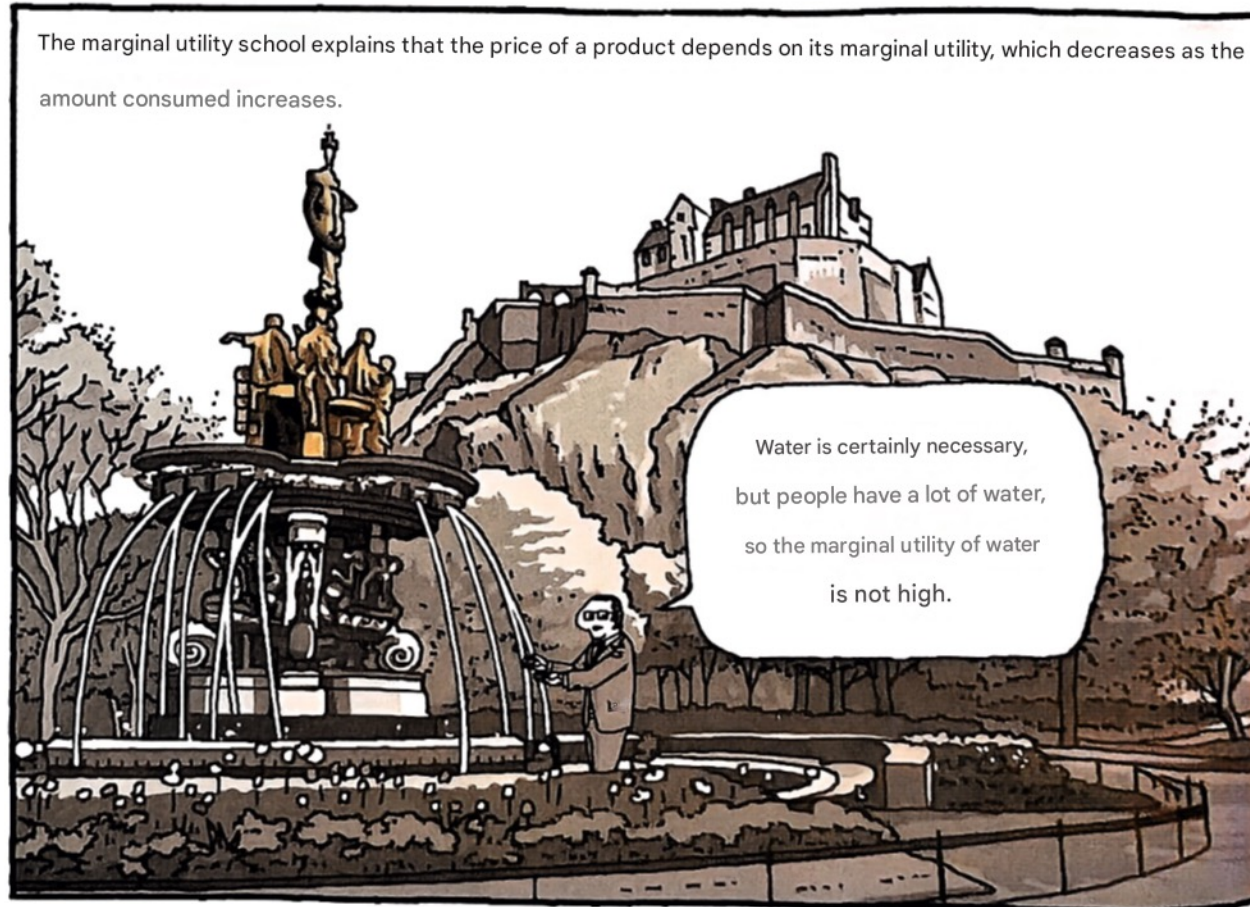


# Principle 3: Rational People Think at the Margin



Ultimately, it was the marginal utility school a century later that explained Smith's paradox.

The marginal utility school explains that the price of a product depends on its marginal utility, which decreases as the amount consumed increases.



Water is certainly necessary, but people have a lot of water, so the marginal utility of water is not high.

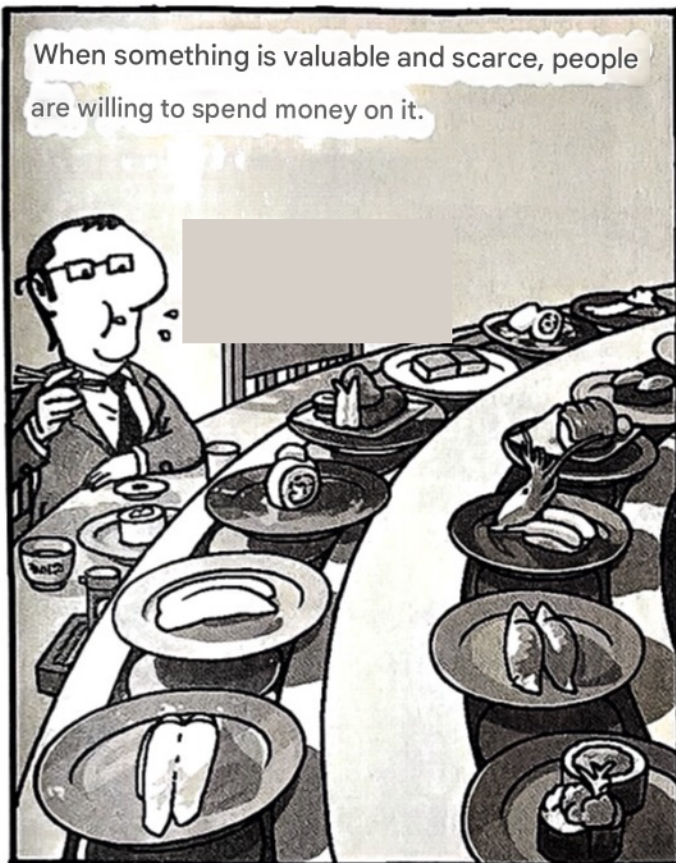


# Principle 3: Rational People Think at the Margin





# Principle 3: Rational People Think at the Margin





# The Economics of Water

The economics of water



So, can we sell water at the same price as beer and wine?

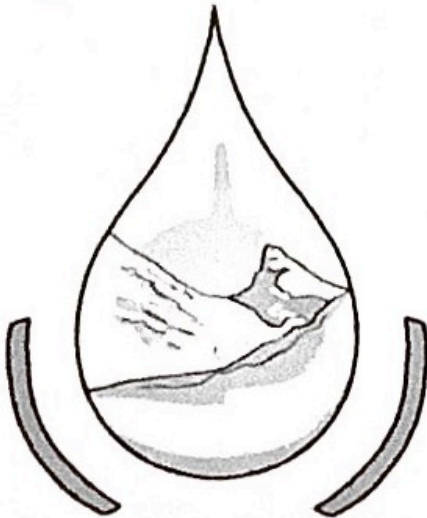


It is indeed possible, as long as consumers believe that the marginal utility of water is high enough.



# The Economics of Water

Evian water has been portrayed as very clean water originating from the snow on mountaintops, mixed with raindrops and filtered through natural processes.

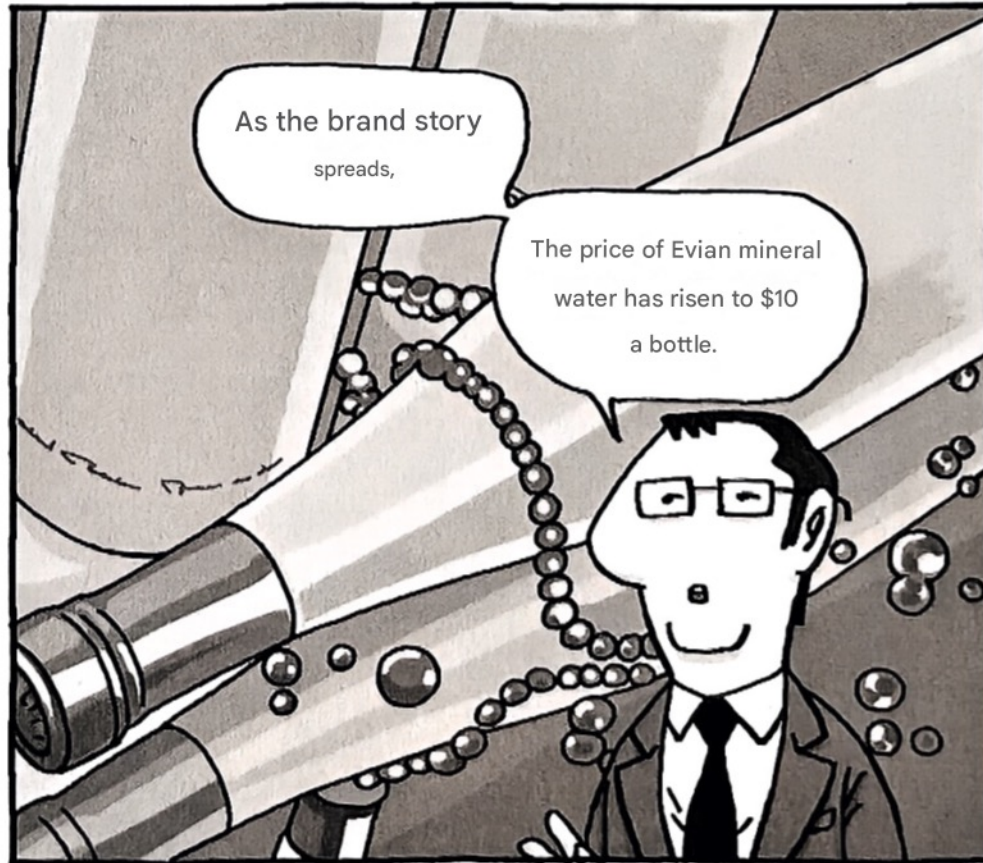




# The Economics of Water



# The Economics of Water





# SUMMARY



- The third principle of economics is: "Rational people think at the margin."
- Rational people are those who strategically leverage opportunities to achieve their goals effectively.
- They compare marginal benefits with marginal costs and will only choose an option when the former exceeds the latter.
- The term "margin" refers to the incremental change triggered by a variation in a variable.

# SUMMARY



- Take airline seats for sale as an example.
- Even if the selling price is lower than the average cost of a seat, airlines may still choose to sell it because the marginal benefit of the seat exceeds its marginal cost.
- Although diamonds are not essential for survival, their price is higher than that of water. This is due to the scarcity of diamonds, making their marginal benefit significantly greater than that of water.



# Chapter 1: How People Make Decisions

- Principle 1: People Face Trade-offs
- Principle 2: The Cost of Something Is What You Give Up to Get It
- Principle 3: Rational People Think at the Margin
- Principle 4: People Respond to Incentives

# Principle 4: People Respond to Incentives

Principle

**4**

People respond  
to incentives.

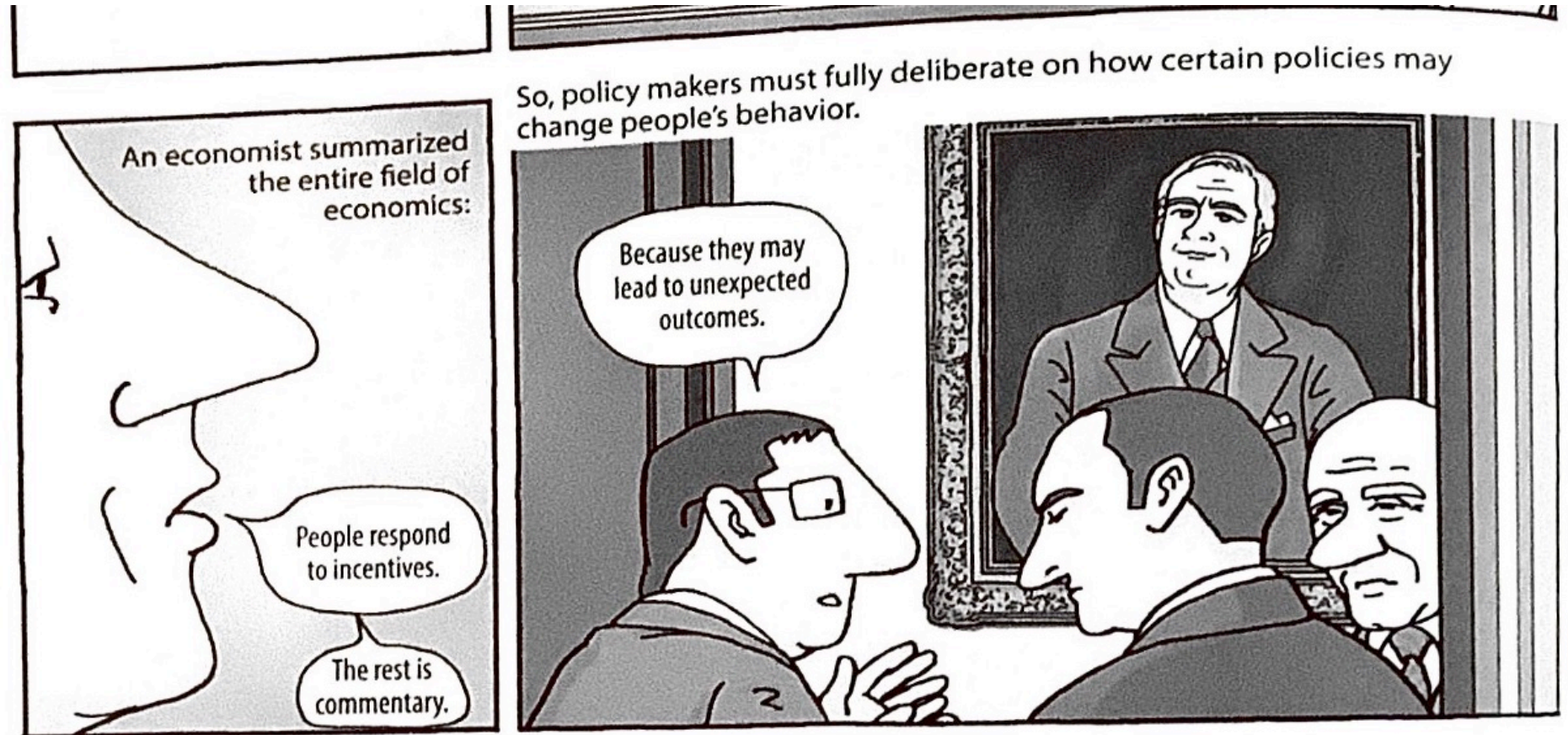
Incentive refers to what motivates people to act,  
such as fear of punishment or expectation of  
a reward.

Incentive

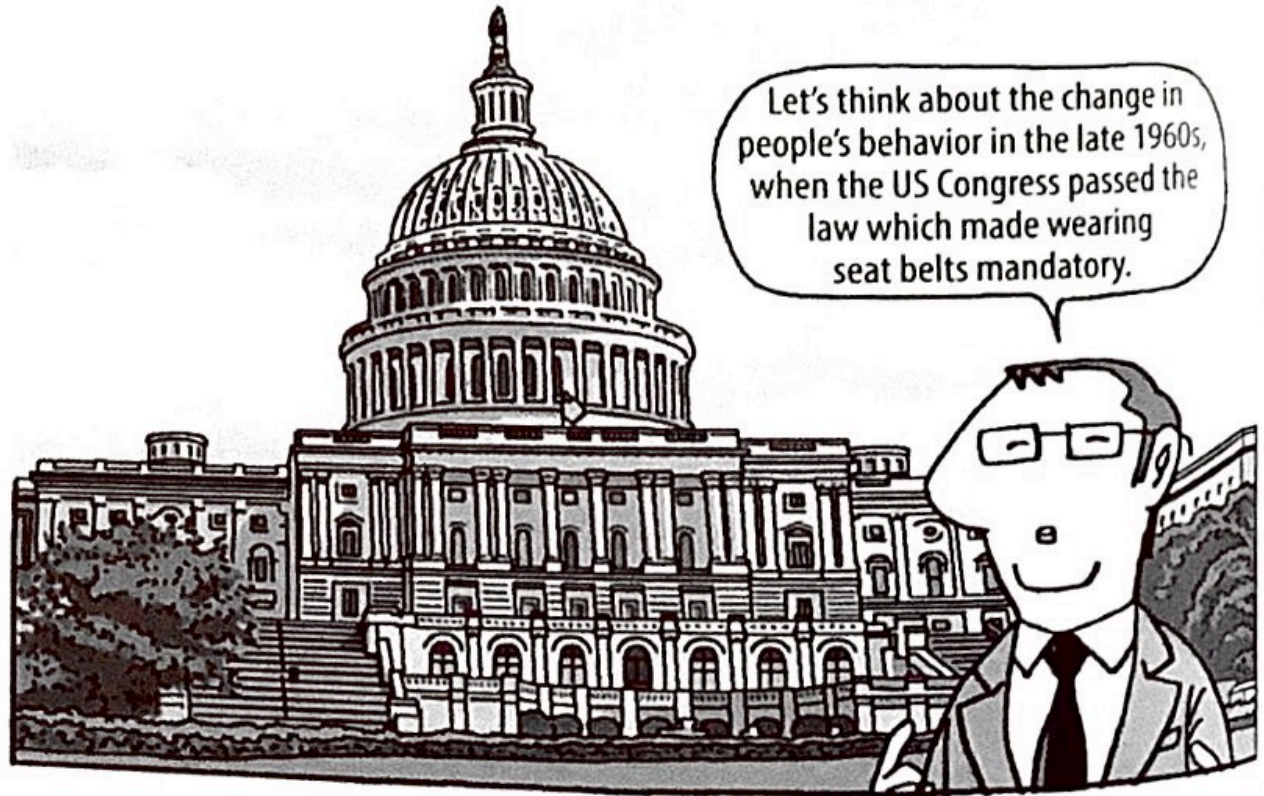
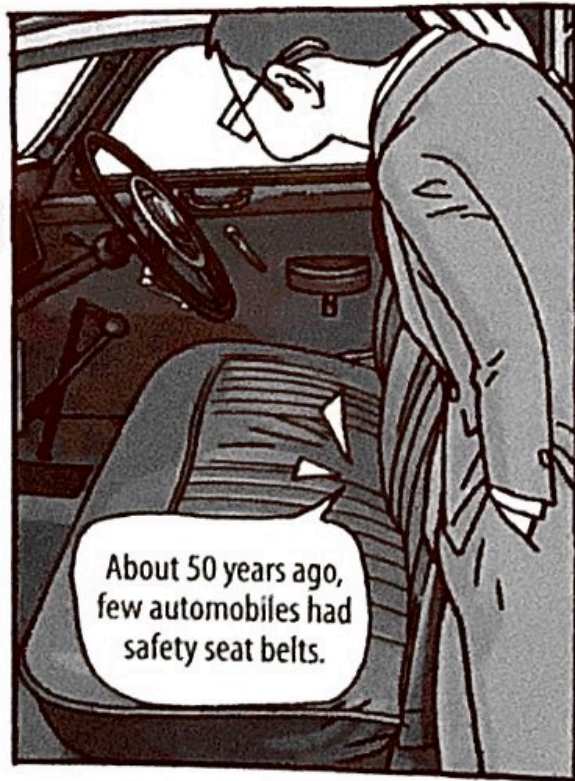




## 原理 4：人们会对激励做出反应



# Principle 4: People Respond to Incentives

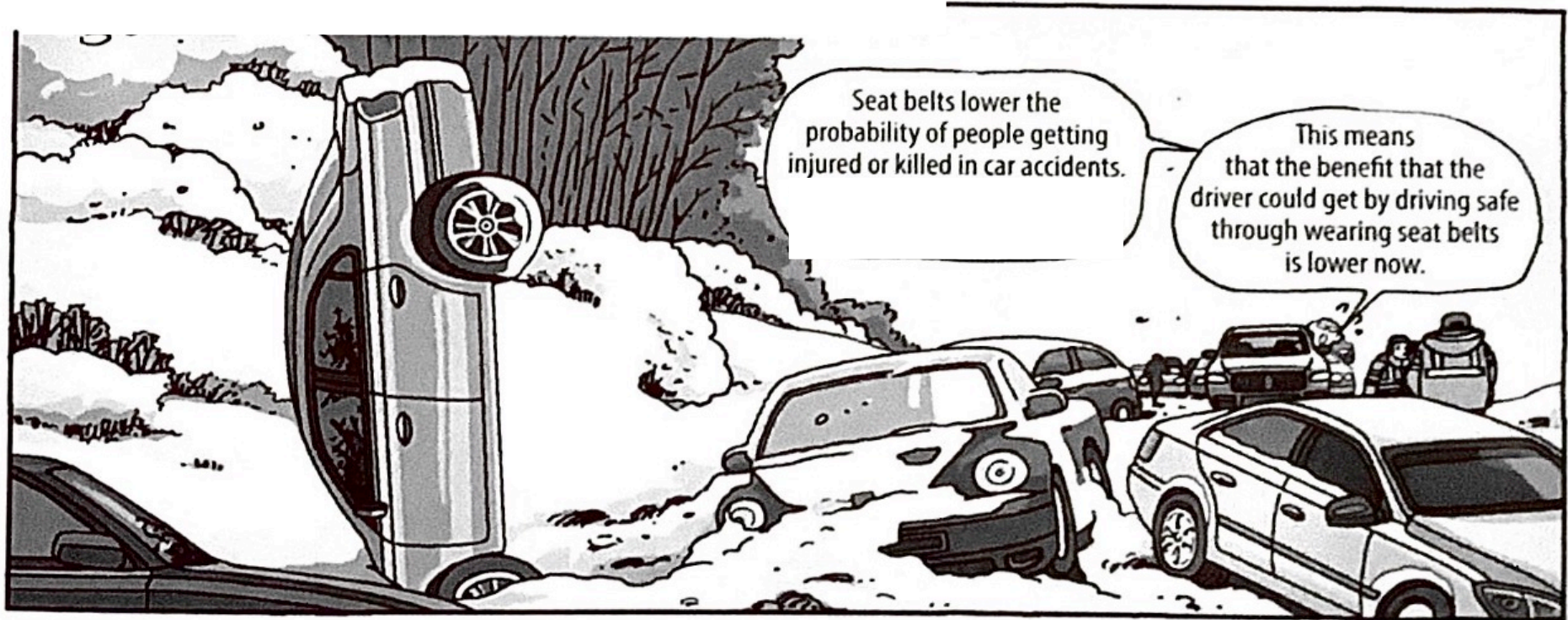




# Principle 4: People Respond to Incentives

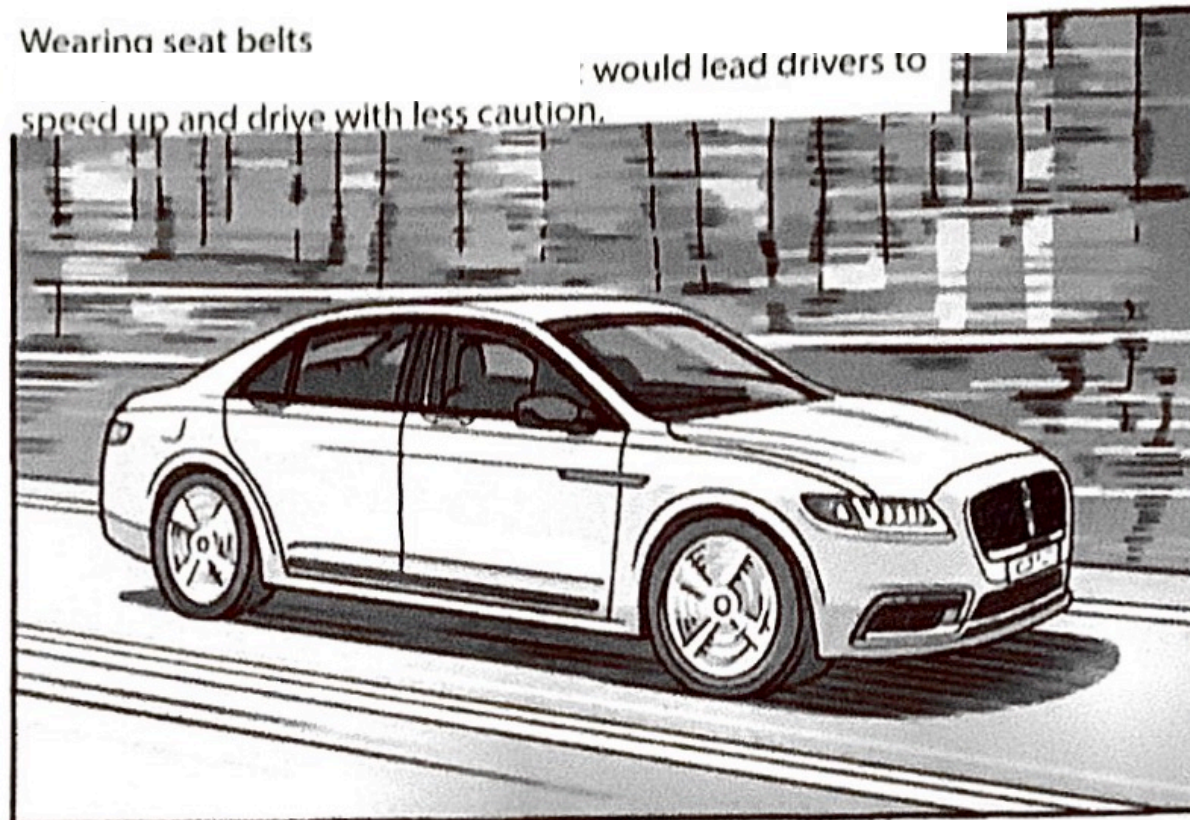


# Principle 4: People Respond to Incentives





# Principle 4: People Respond to Incentives

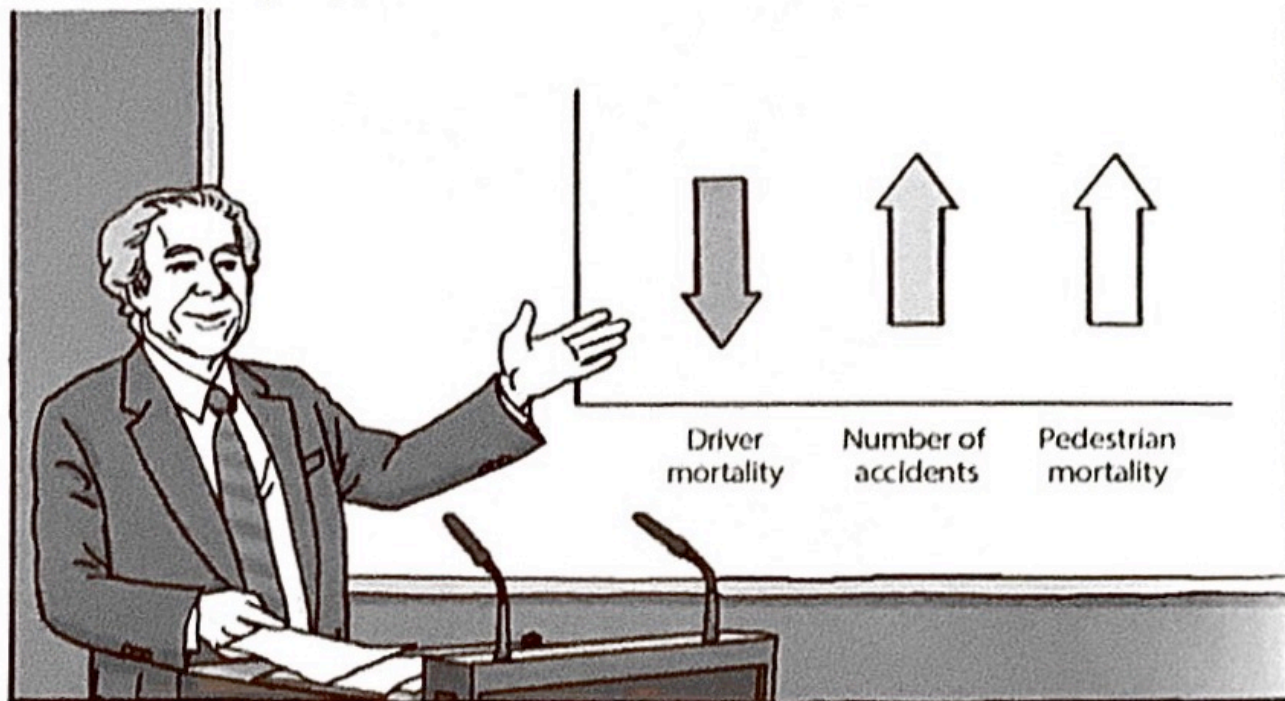


# Principle 4: People Respond to Incentives

Does it sound like an implausible theoretical hypothesis?



Not really. Economist Sam Peltzman statistically proved that this was what actually happened in the US in his paper published in 1975.





# Principle 4: People Respond to Incentives

He concluded that seat belt legislation reduced driver fatalities but increased the number of car accidents and pedestrian fatalities.

When we analyze any policy, we must consider not only direct effects, but also those hidden indirect effects that affect incentives.

If policy changes

incentives, then people's behavior will change.

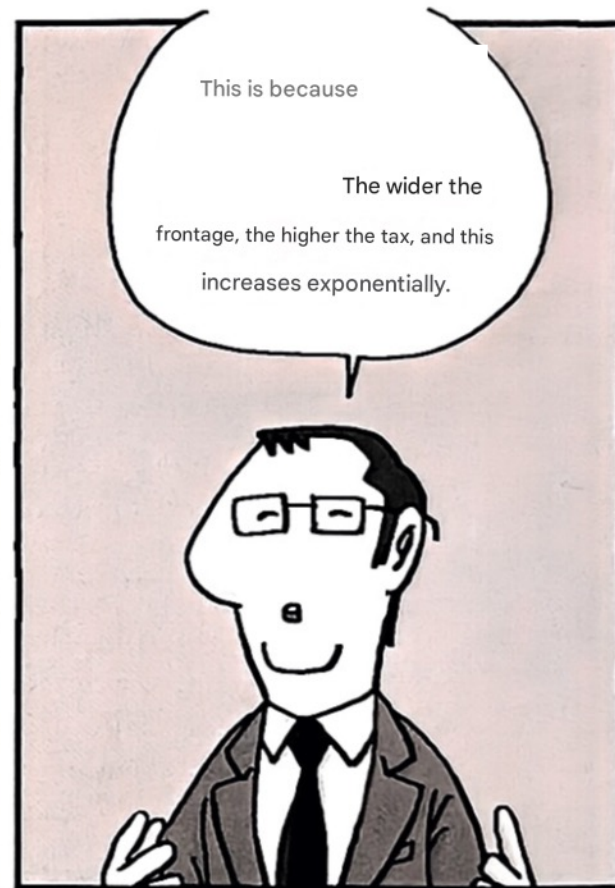
# Good Incentives and Bad Incentives

Good Incentives  
Bad Incentives

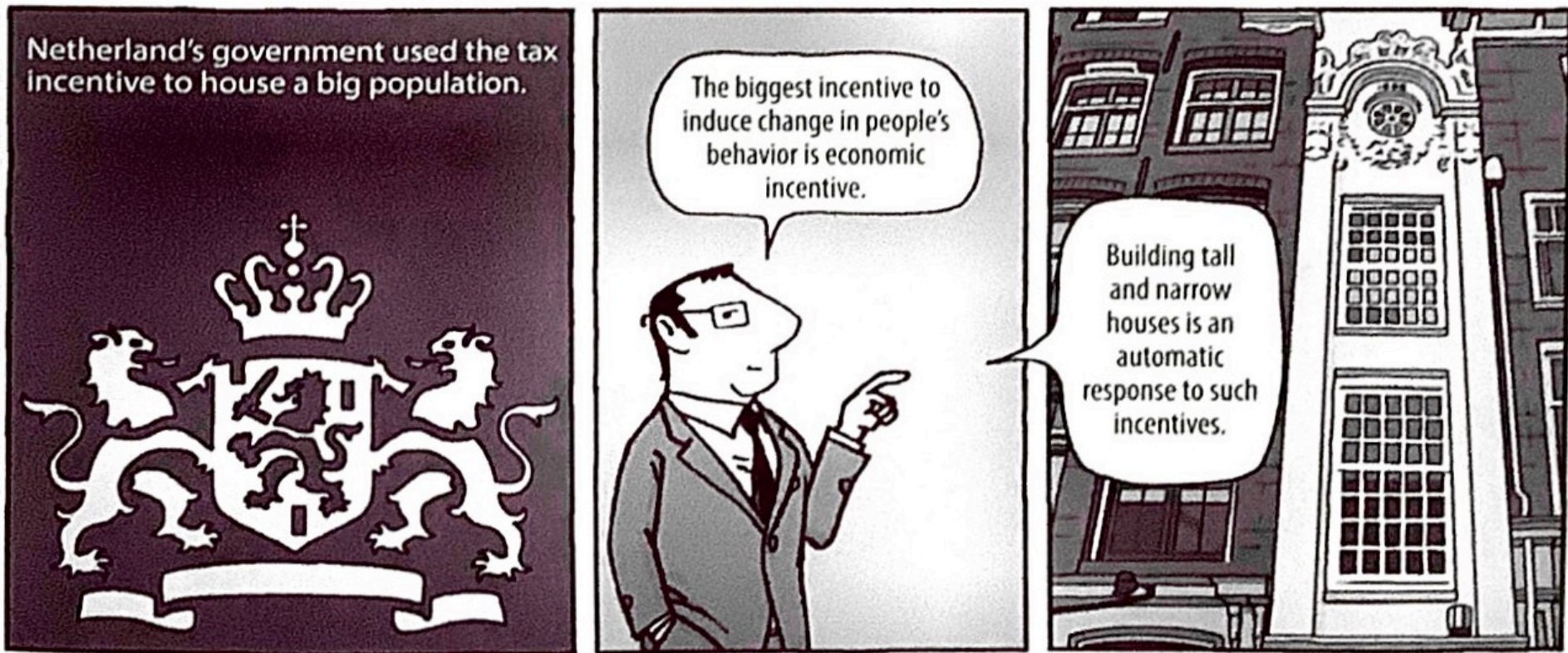




# Good Incentives and Bad Incentives



# Good Incentives and Bad Incentives



Because more houses can be built per unit area of land.



# Good Incentives and Bad Incentives

The Finnish government levies fines based on a person's wealth, a practice that some find too harsh.



A Swedish millionaire was caught speeding by police in the Åland Islands, Finland.

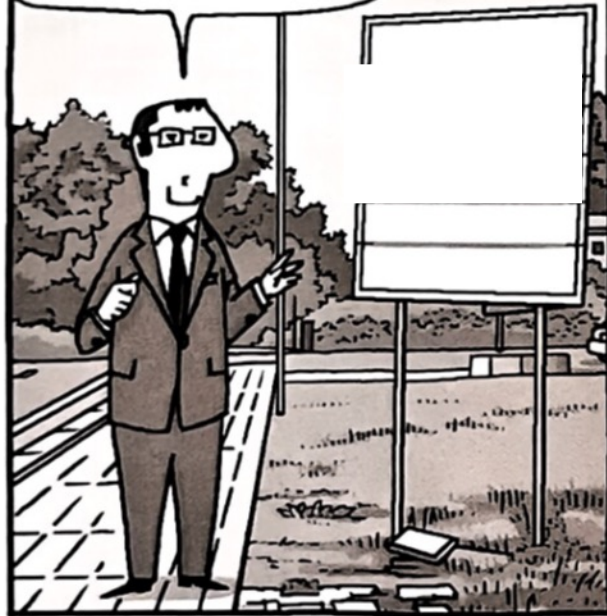


The amount on your speeding ticket is \$130,000.



# Good Incentives and Bad Incentives

Whether people speed is also a decision made after weighing the costs and benefits. Different people can afford different fines.



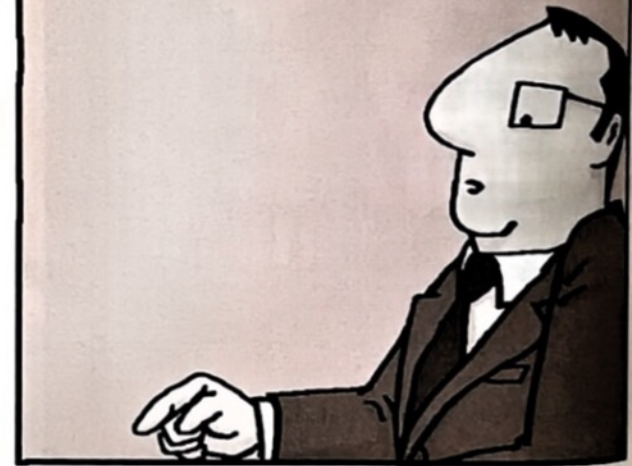
Based on this consideration, the Finnish government decided to link the amount of taxes and fines to personal wealth.

For example, a \$100 fine is too little for a millionaire to obey traffic laws.



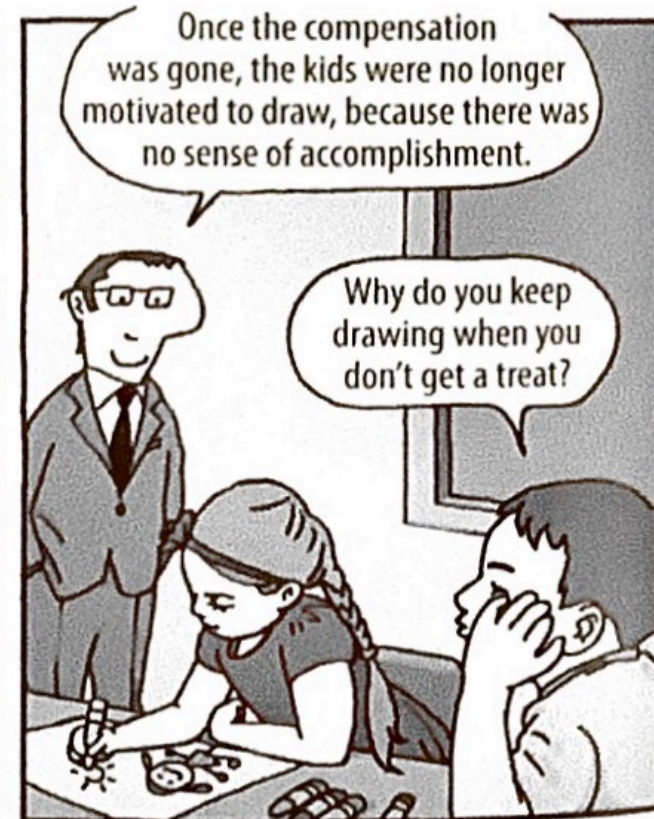
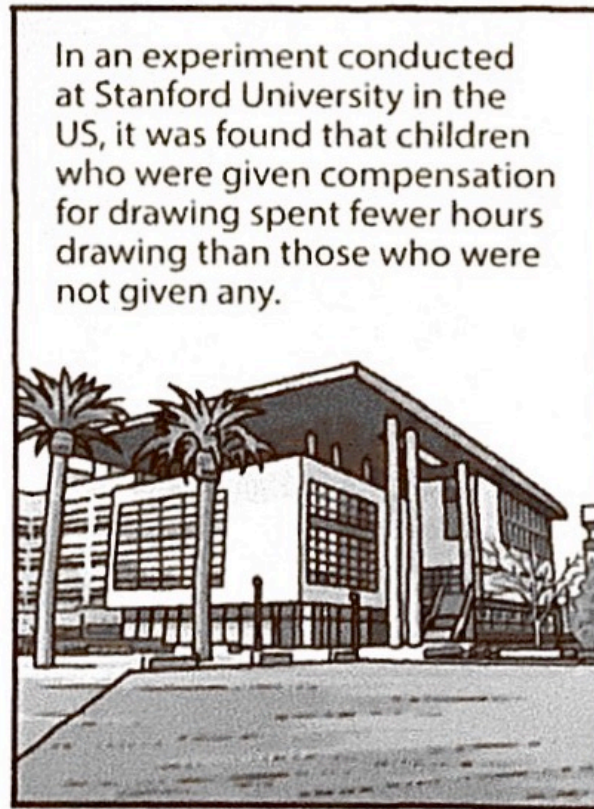
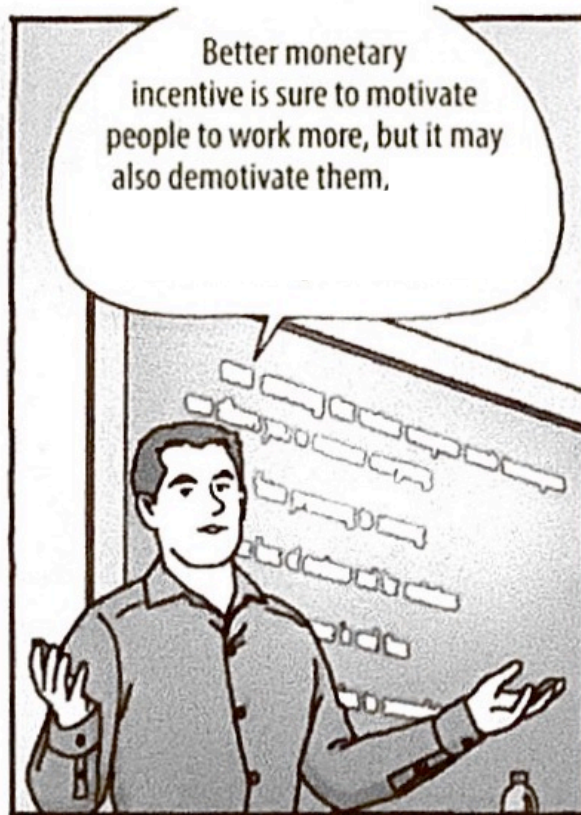
Incentives can bring unexpected results.

American sociologist Duncan Watts studied the relationship between work and monetary compensation.

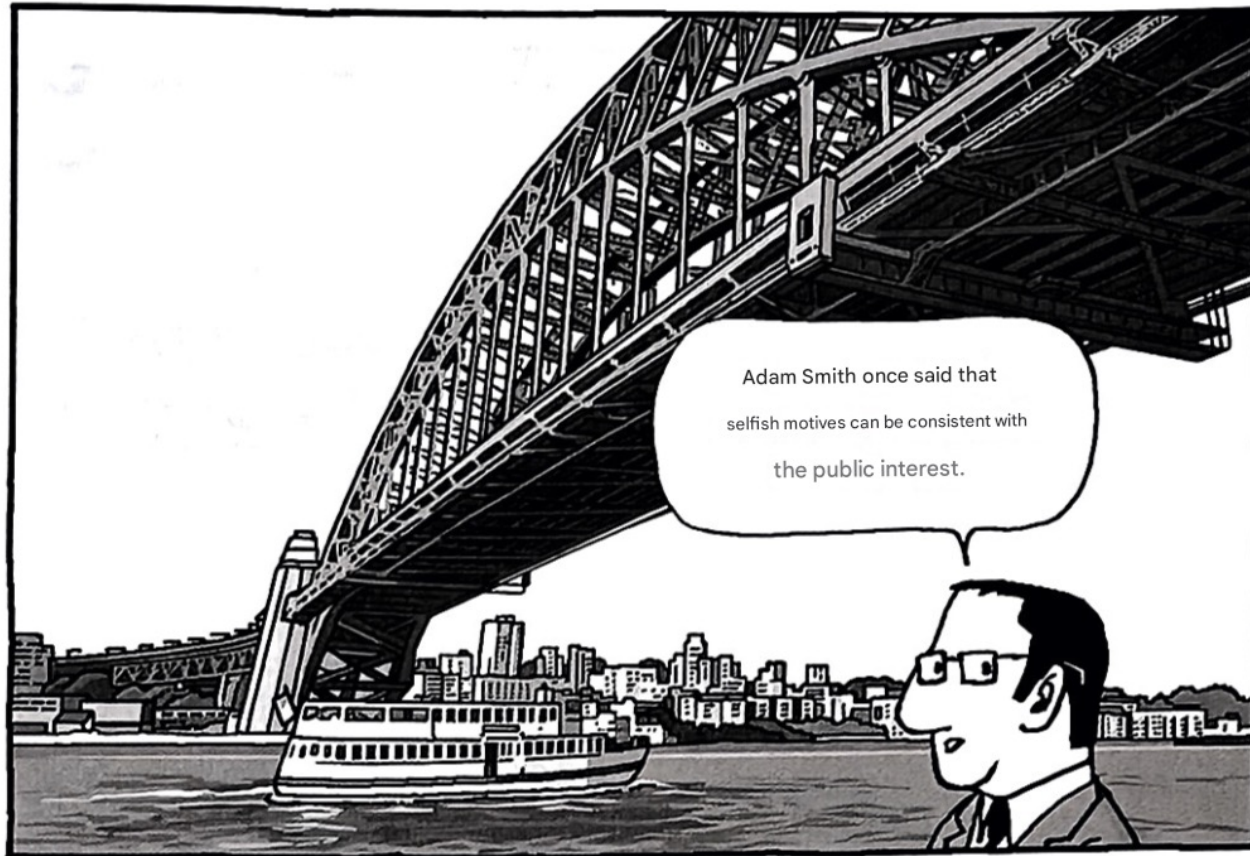




# Good Incentives and Bad Incentives

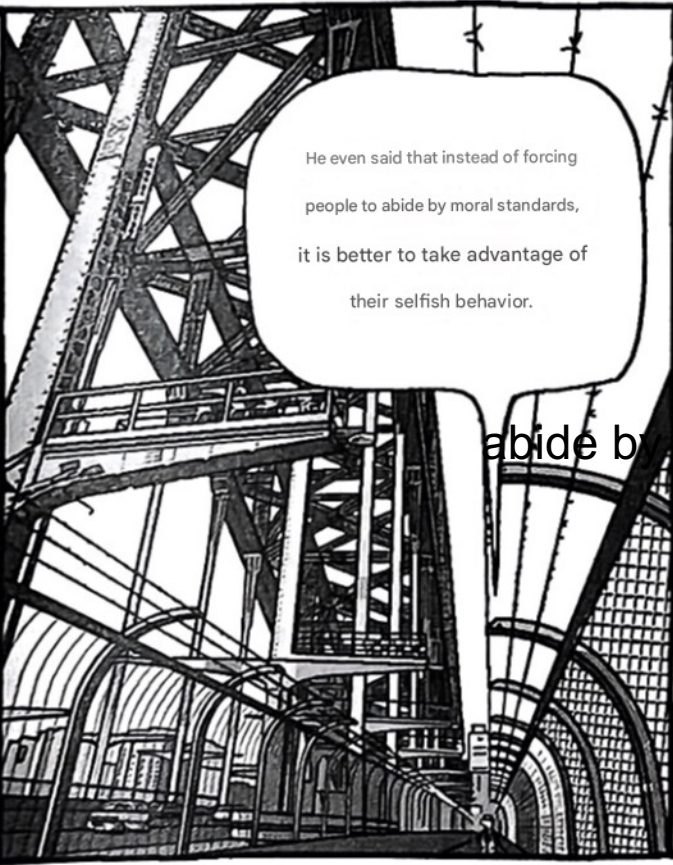


# Good Incentives and Bad Incentives






# Good Incentives and Bad Incentives



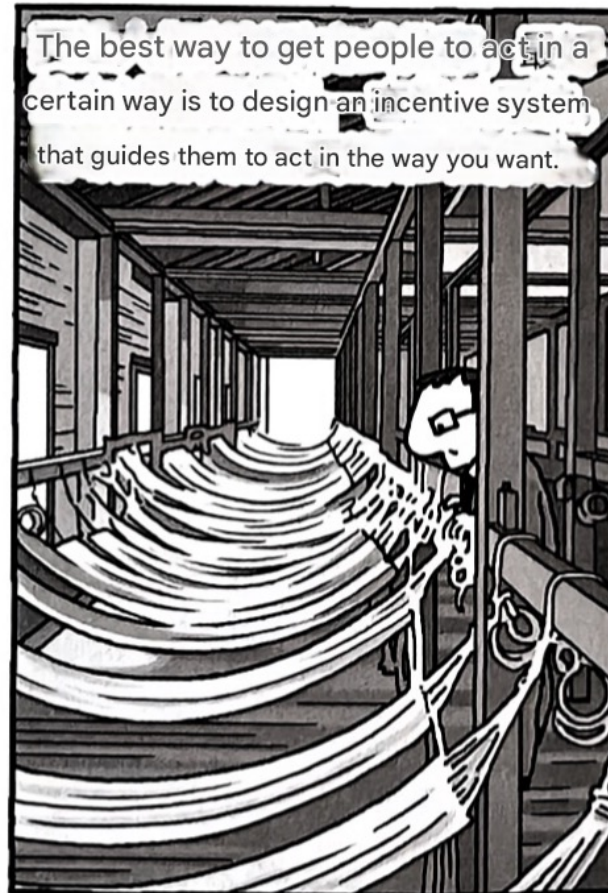
He even said that instead of forcing people to abide by moral standards, it is better to take advantage of their selfish behavior.

abide by



According to Smith, we need the right economic incentives to align individual interests with the public interest.

# Good Incentives and Bad Incentives

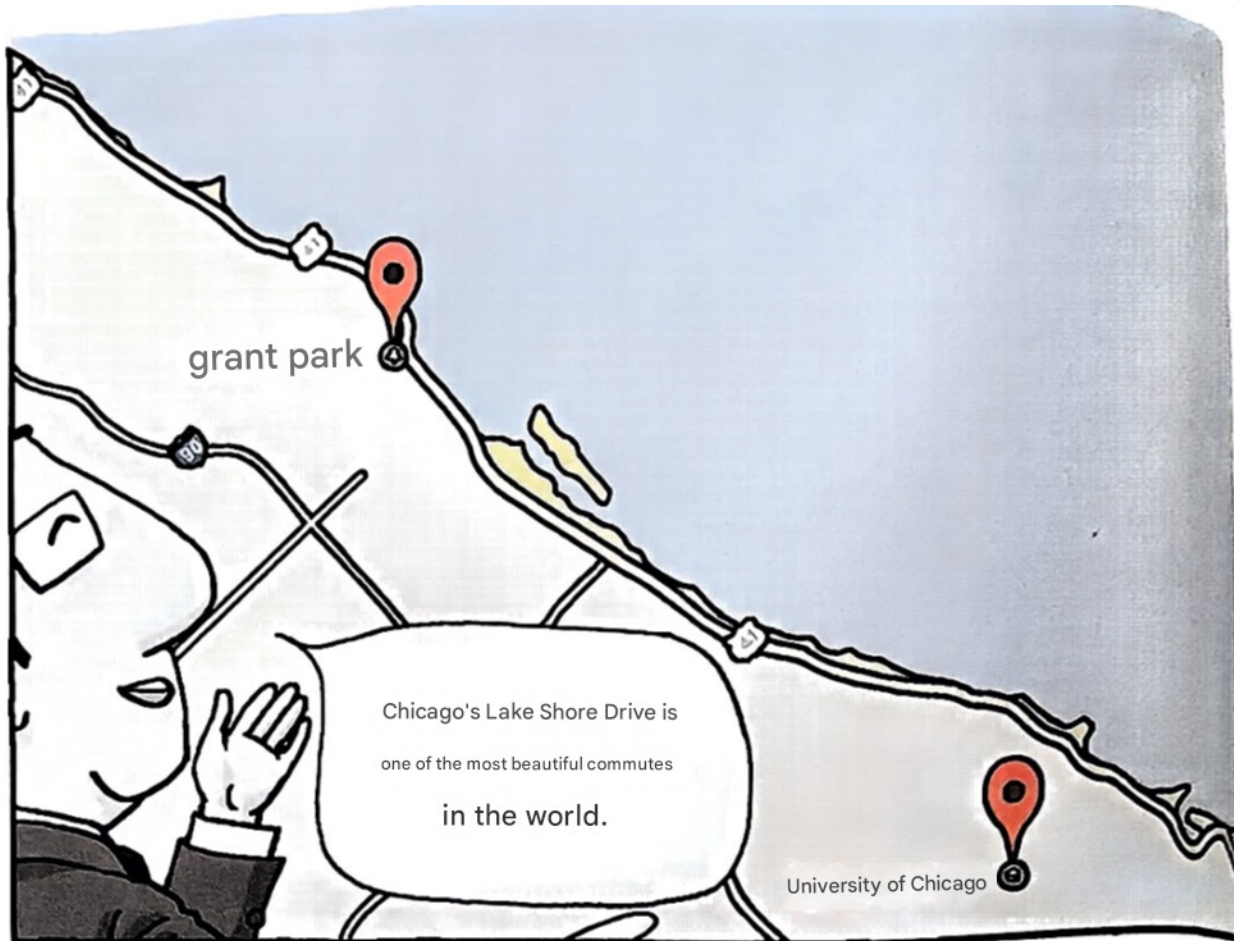
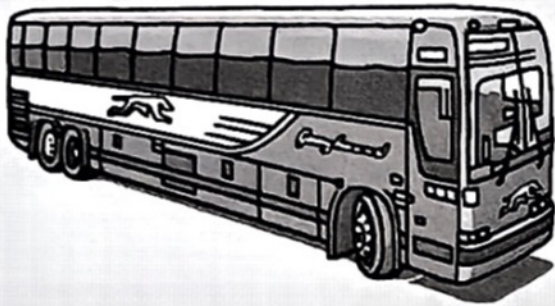




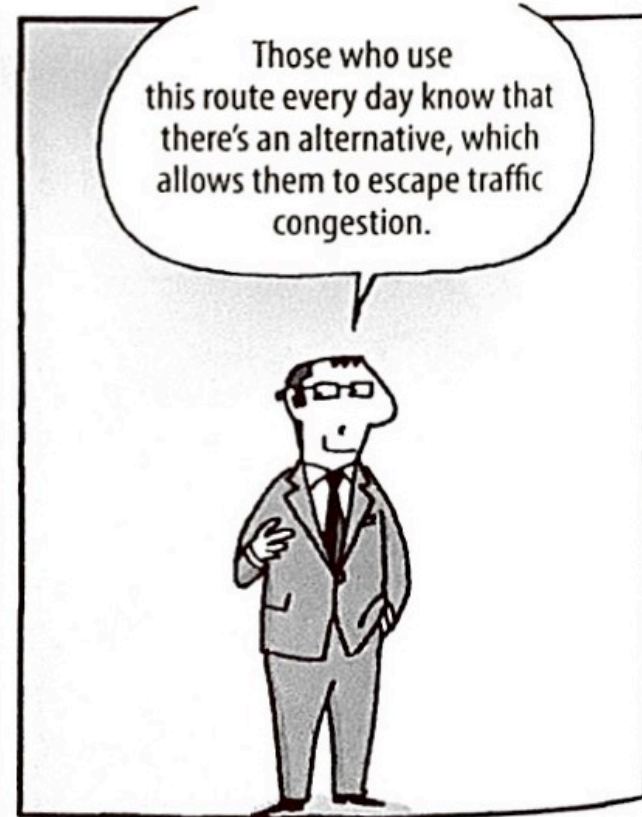
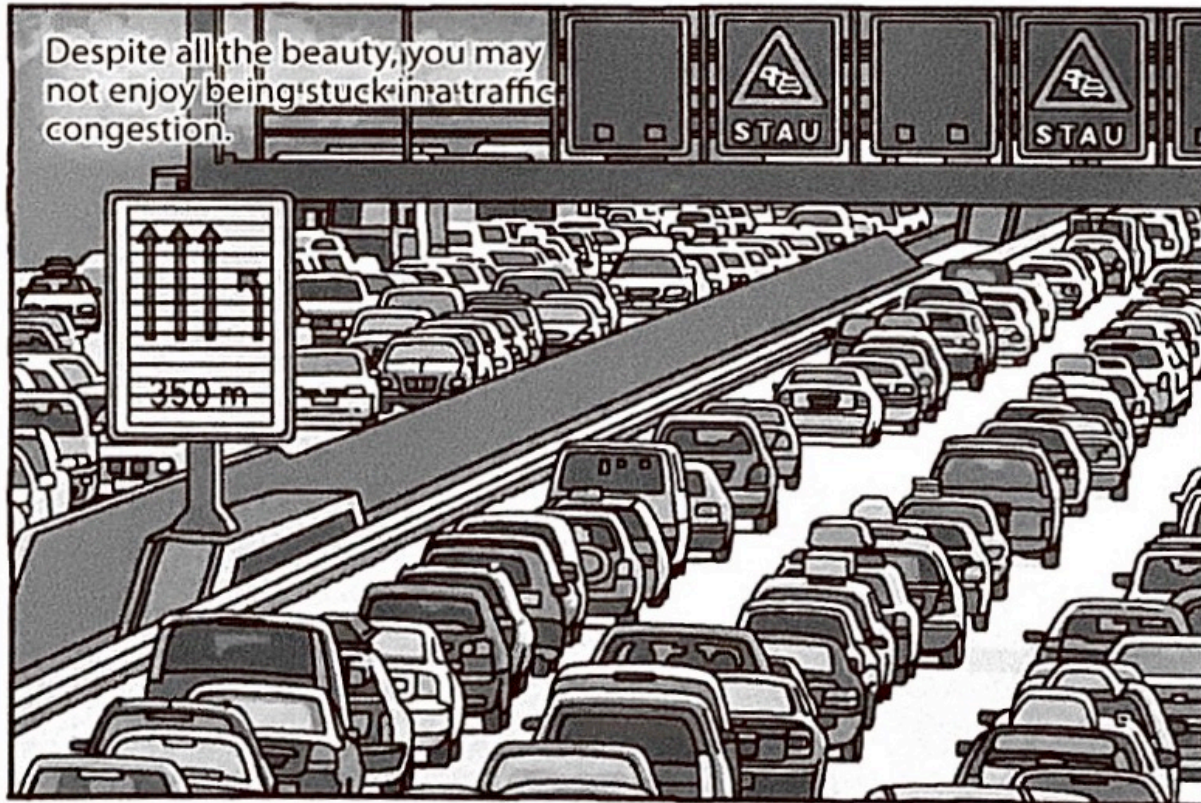
# Bus Operating Hours

bus

running time

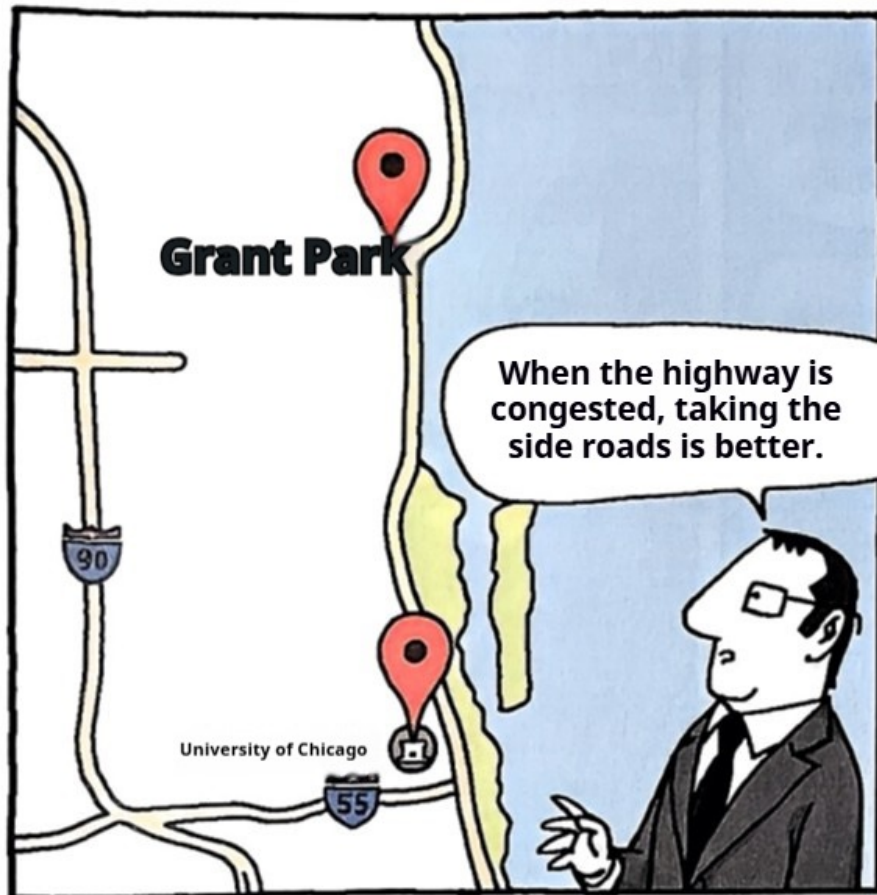


# Bus Operating Hours





# Bus Operating Hours



However, many buses persist in taking the highway even when there is traffic congestion.



Is it because the bus driver does not know about the other road?

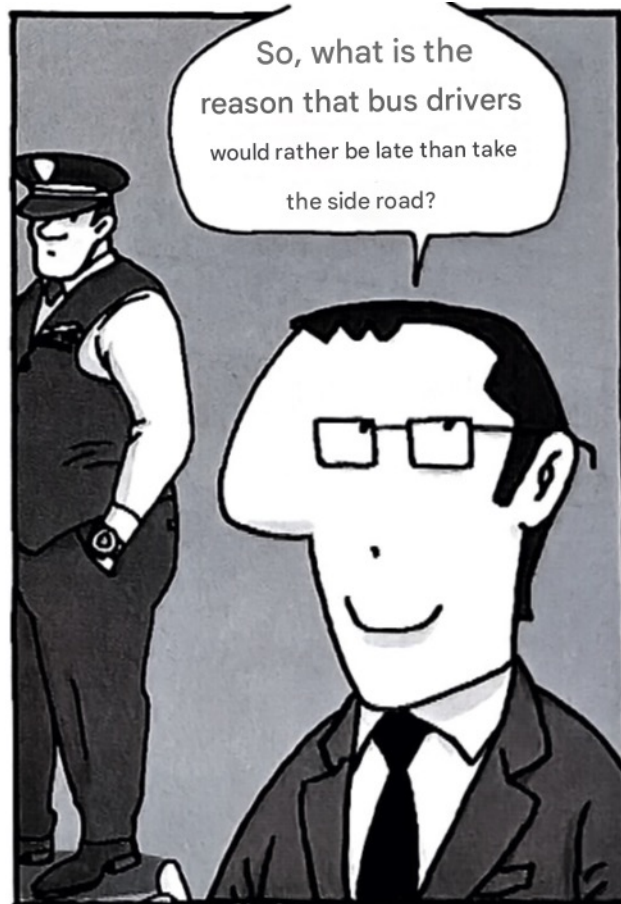


# Bus Operating Hours





# Bus Operating Hours



# Bus Operating Hours

Some of you may think that perhaps the bus drivers are paid too little.



But the Chicago bus drivers receive the 7th highest wage in the US. The central issue is not the wage level, but how they get paid.

They are paid in proportion to their working hours. Their wage is not based on the number of passengers or the number of times they ran the course.

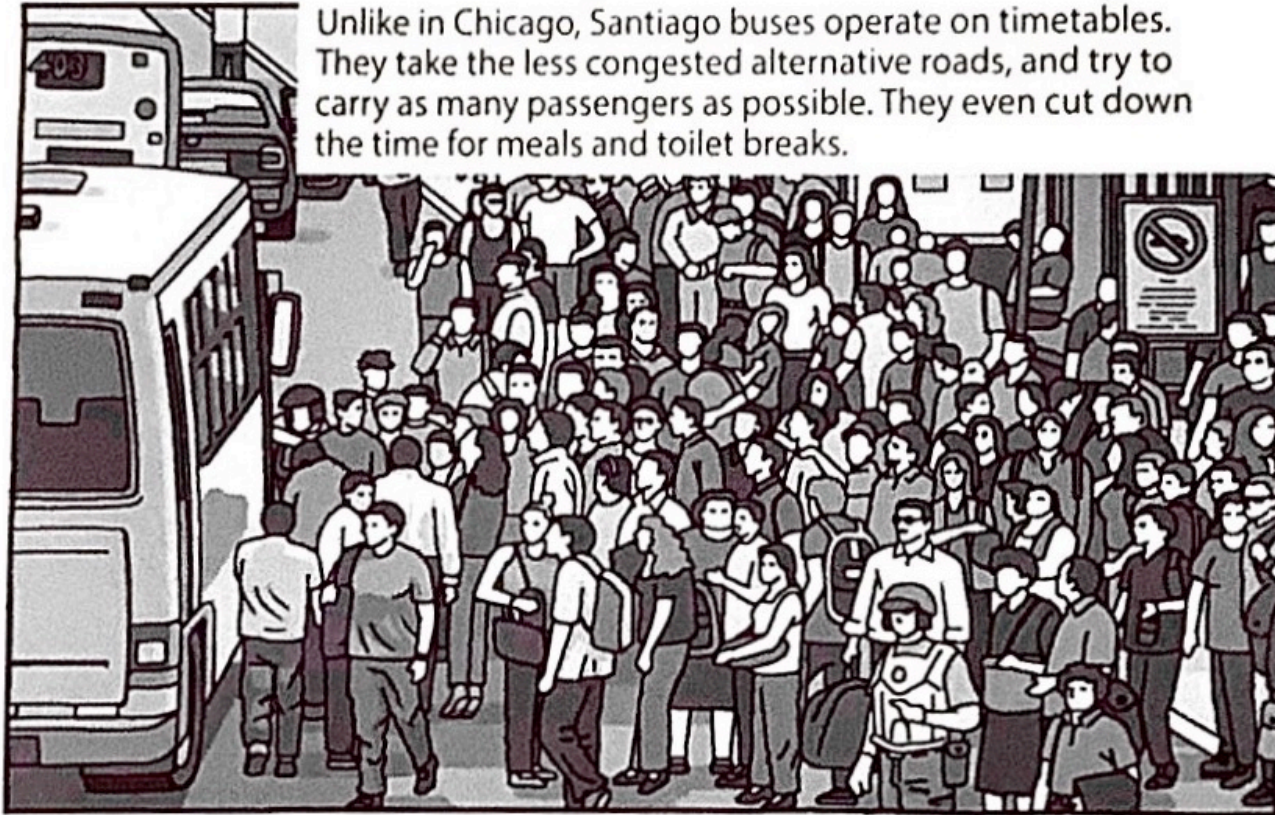


Meanwhile, bus drivers in Chile receive their wages based on the number of passengers they carry.





# Bus Operating Hours



# Bus Operating Hours





# SUMMARY



- The fourth principle of economics is: "People respond to incentives."
  - Incentives, similar to the fear of punishment or the expectation of reward, guide people to act in certain ways.
  - Rational individuals make decisions by weighing marginal costs against marginal benefits.
- Incentives are particularly important when analyzing markets.
  - High prices in the market encourage consumers to reduce consumption and prompt suppliers to increase production.
  - Low prices, on the other hand, lead consumers to buy more while causing suppliers to cut back on production.

# SUMMARY



- Policies can alter people's behavior by manipulating benefits and costs, often through the use of incentives.
- For example, if a policy imposes heavy taxes on gasoline, people will be incentivized to choose more fuel-efficient cars, use public transportation instead of private cars, or live closer to their workplaces.



# SUMMARY



- Market responses to rising gasoline prices include:
  - Consumers purchase smaller cars
  - More people choose motorcycles instead of cars
  - Increased use of public transportation
  - Airlines face difficulties
  - Increased demand for new energy vehicles
  - People prefer buying or living near subway stations
  - Students enroll in online courses to reduce commuting costs

# SUMMARY



- When drivers decide how to drive, they weigh the marginal costs and benefits of driving slowly for safety.
  - Laws mandating seat belt use reduce the probability of injury or death in accidents, thereby lowering the cost of accidents.
  - This also means that when drivers wear seat belts, the benefit of driving slowly for safety decreases.
  - Ultimately, seat belt legislation leads to more traffic accidents.



---

# Quick Quiz

---

1. Please explain the trade-offs involved in the following scenarios:

(1) A family needs to decide whether to buy a new car.

(2) The government needs to decide how much budget to allocate to a national park.

(3) A company's executive needs to decide whether to build a new factory.

(4) A professor needs to decide how much time to spend preparing lessons.

(5) A college student needs to decide whether to pursue graduate studies.

---

# Quick Quiz

---

2. Please discuss the following statements from the perspective of equity and efficiency:

(1) Everyone in society should be guaranteed the best possible healthcare.

(2) Workers who are laid off should receive unemployment benefits until they find a new job.



---

# Quick Quiz

---

3. What is the opportunity cost of visiting a theme park?

---

# Quick Quiz

---

4. You bet on a baseball game and win \$1,000. You can choose to spend all the money now or deposit it in a bank for one year at a 5% interest rate. What is the opportunity cost of spending the \$1,000 now?



# Quick Quiz

---

5. The U.S. Social Security system provides pensions to people over 65. However, for those with additional income, their pension benefits are reduced, with the reduction rate increasing as income levels rise. Please analyze the impact of this policy on additional income.

(1) How does this policy create incentives or disincentives for saving among people under 65?

(2) How does this policy create incentives or disincentives for employment decisions among people over 65?

---

# Quick Quiz

---

6. The government changed the welfare system, limiting unemployed individuals to a maximum of two years of benefits. How will this change affect employment behavior? Describe any trade-offs between efficiency and fairness.



---

# Quick Quiz

---

7. Economics \_\_\_\_\_.

- a. studies how society manages its scarce resources
- b. studies how corporate management systems generate maximum profits
- c. predicts inflation, unemployment, and stock prices
- d. studies how the government solves problems caused by unbridled selfish behavior

---

# Quick Quiz

---

8. The opportunity cost of watching a movie is \_\_\_\_\_.
- a. the price of the movie ticket
  - b. the price of the movie ticket plus the cost of drinks and popcorn purchased at the cinema
  - c. the total monetary expenses and time spent on watching the movie
  - d. zero (if you enjoyed the movie and found the cost and time worthwhile)



---

# Quick Quiz

---

9. Marginal changes \_\_\_\_\_.
- a. are unimportant for public policy
  - b. refer to incremental adjustments to the current situation
  - c. lead to inefficient outcomes
  - d. do not affect incentives