Costs

OPPORTUNITY COST

- A firm's total cost of producing a given level of output is the opportunity cost of the owners
  - Everything they must give up in order to produce that amount of output
- Opportunity cost is the most fundamental cost concept.
  - The opportunity cost of doing or getting something is:
- what you could have done or gotten instead
- Example: Your opportunity cost for taking this class includes:
- Whatever else you could have bought with your tuition and fee money
  - plus
- the work, family participation, and recreation that you are not doing because you are here.

ACCOUNTING & ECONOMIC COSTS

- **Accounting cost** is the concept that goods or services cost what was paid for them.
- **Economic cost** is the amount required to keep a resource in its present use; the amount that it would be worth in its next best alternative use.
- Economists & Accountants calculate costs differently:
  - Economists are interested in studying how firms make production & pricing decisions. They include all costs.

Economic Costs = Explicit + Implicit Costs

  - Accountants are responsible for keeping track of the money that flows into and out of firms. They focus on *explicit costs*.

Accounting Costs = Explicit Costs

Implicit and Explicit Costs

- Explicit Costs: Costs that involve an exchange of money
  - Explicit (involving actual payments)
    - Money actually paid out for the use of inputs

-ie: Rent, Wages, Licence, Materials

- Implicit Costs: Costs that don't involve an exchange of money
  - Implicit (no money changes hands)
    - The cost of inputs for which there is no direct money payment
- -ie: Wage that could have been earned working elsewhere

Costs Example

- Last year, John decided to open a box factory. Hugo built the factory for $200,000. Materials and wages required to make a box amount to 5 cents per box.
- Before starting production, John was offered a job at BoxMart that paid $4,000 a month.
- Classify John's costs (explicit, implicit, economic, accounting, and sunk)

Explicit Costs:
Factory ($200K)
Production (5 cents/box + ongoing cost)

Implicit Costs:
Forgone Wage ($4,000/month)

Accounting Costs=Explicit Costs
Economic Costs = Explicit+Implicit Costs

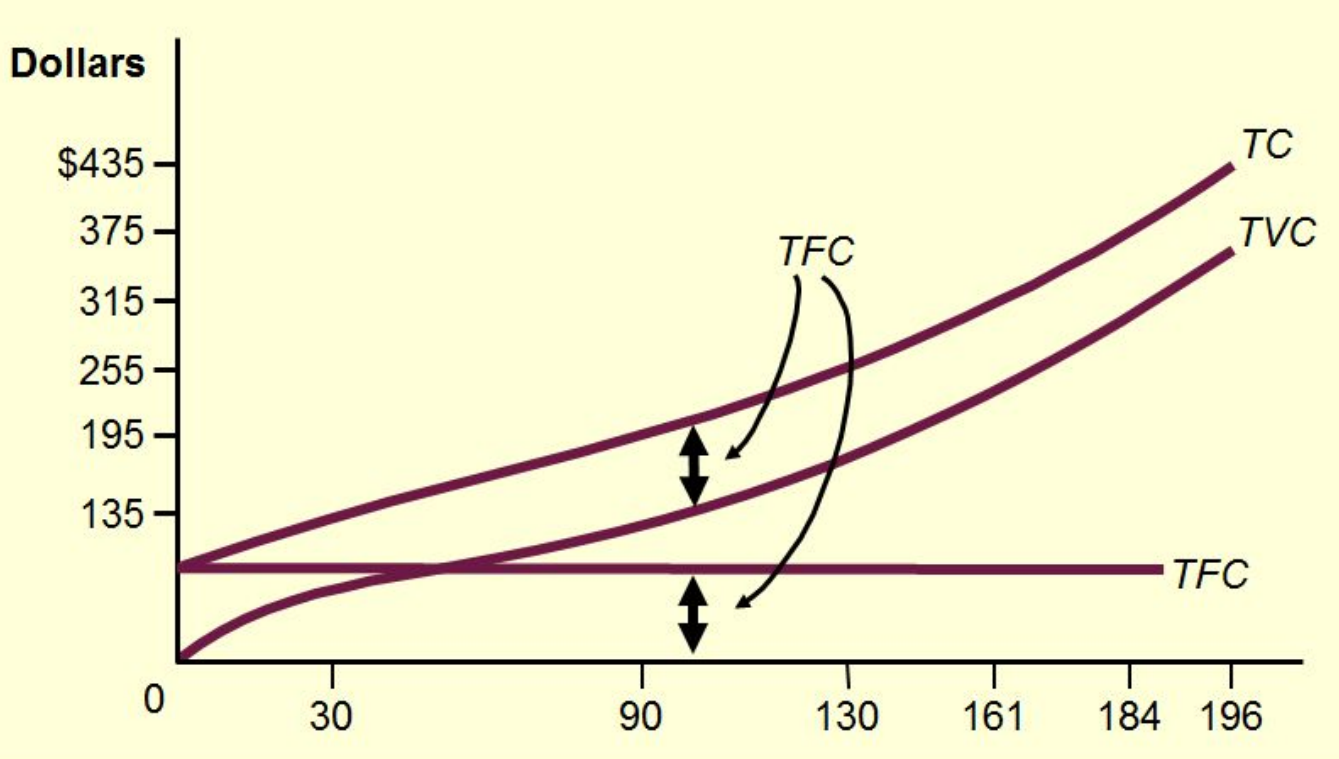
Sunk Costs= Factory ($200K)

- Fixed costs
  - Costs of a firm's fixed inputs
- Variable costs
  - Costs of obtaining the firm's variable inputs

Types of total costs

- Total fixed costs
  - Cost of all inputs that are fixed in the short run
- Total variable costs
  - Cost of all variable inputs used in producing a particular level of output
- Total cost
  - Cost of all inputs—fixed and variable
  - TC = TFC + TVC

Total cost curves



Average Costs

- Average fixed cost (AFC)
  - Total fixed cost divided by the quantity of output produced

$$AFC = \frac{TFC}{Q}$$

- Average variable cost (TVC)
  - Total variable cost divided by the quantity of output produced

$$AVC = \frac{TVC}{Q}$$

- Average total cost (TC)
  - Total cost divided by the quantity of output produced

$$ATC = \frac{TC}{Q}$$

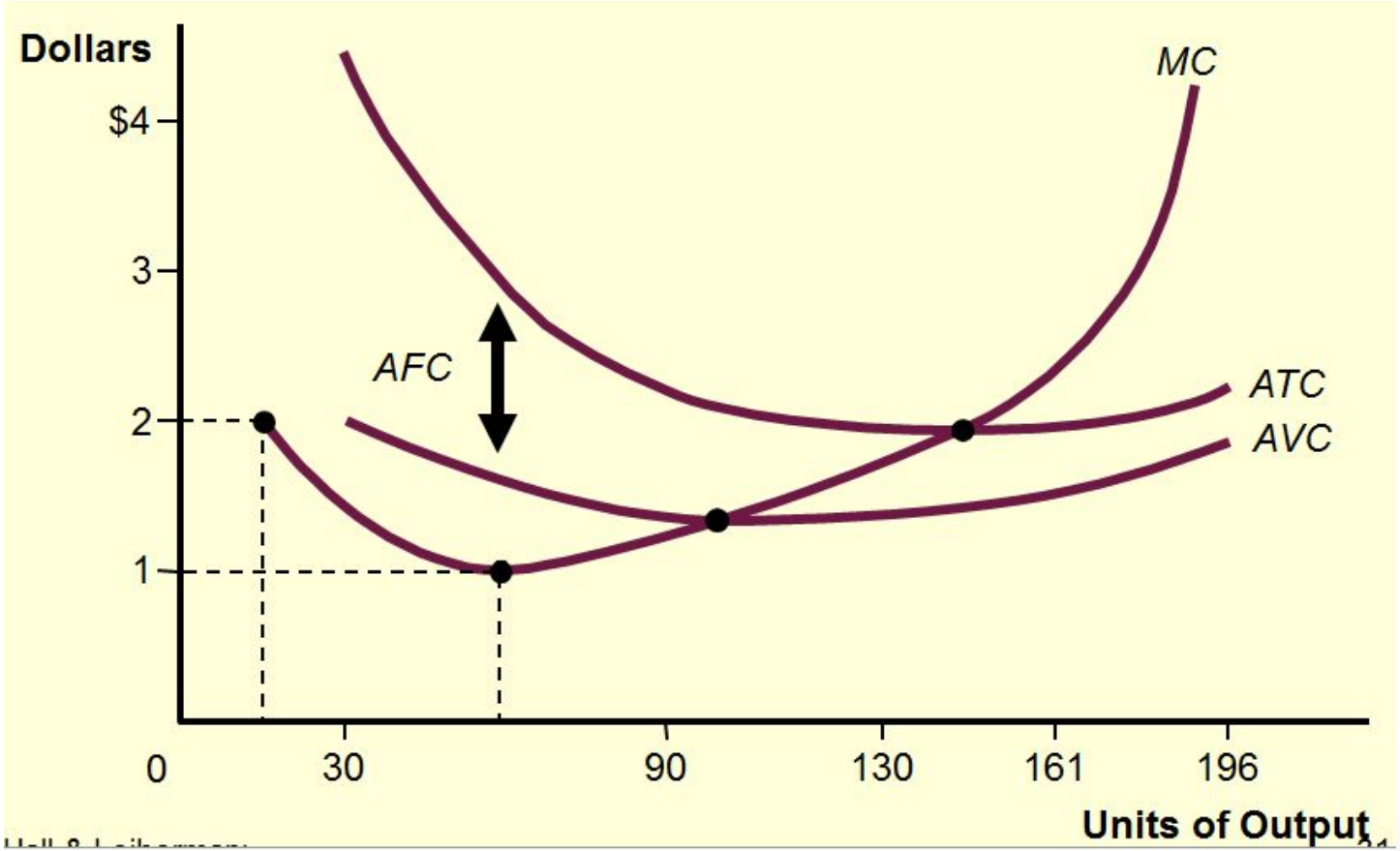
Marginal Cost

- Marginal Cost
  - Increase in total cost from producing one more unit or output
- Marginal cost is the change in total cost (ΔTC) divided by the change in output (ΔQ)

$$MC = \frac{\Delta TC}{\Delta Q}$$

  - Tells us how much cost rises per unit increase in output
  - Marginal cost for any change in output is equal to shape of total cost curve along that interval of output

Average and Marginal costs



Topics

- The Ownership and Management of Firms.
- Production.
- Short-Run Production: One Variable and One Fixed Input.
- Long-Run Production: Two Variable Inputs.
- Returns to Scale.
- Productivity and Technical Change.

What is a firm?

- **Firm -** an organization that converts inputs such as labor, materials, energy, and capital into outputs, the goods and services that it sells.
  - *Sole proprietorships* are firms owned and run by a single individual.
  - *Partnerships* are businesses jointly owned and controlled by two or more people.
  - *Corporations* are owned by *shareholders* in proportion to the numbers of shares of stock they hold.

What Owners Want?

- **Main assumption**: firm's owners try to maximize profit!

- **Profit (π) -** the difference between revenues, R, and costs, C:

$$\pi = R - C$$

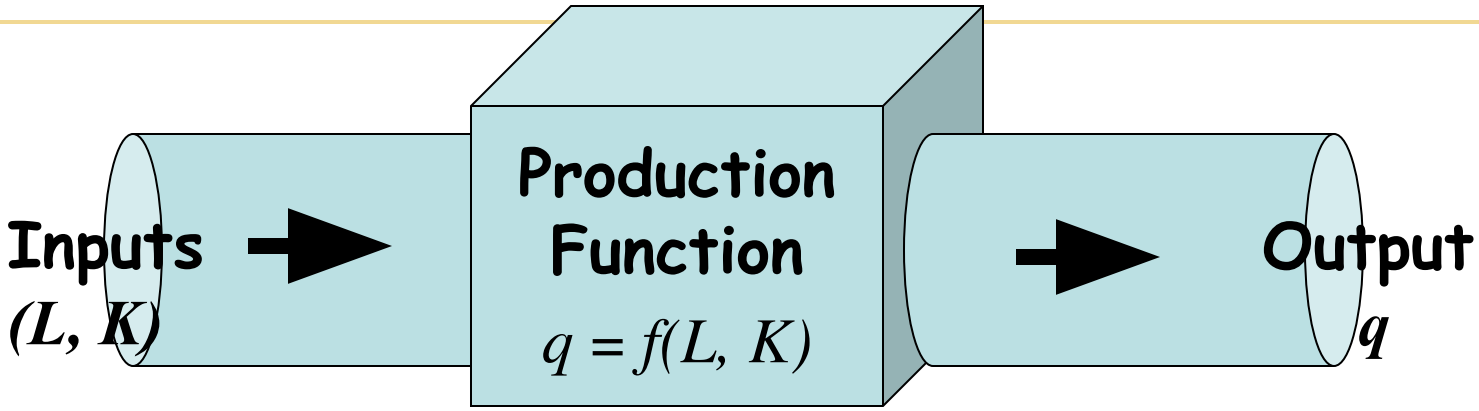
What are the categories of inputs?

- **Capital (*K*) -** long-lived inputs.
  - land, buildings (factories, stores), and equipment (machines, trucks)
- **Labor (*L*) -** human services
  - managers, skilled workers (architects, economists, engineers, plumbers), and less-skilled workers (custodians, construction laborers, assembly-line workers)
- **Materials (*M*) -** raw goods (oil, water, wheat) and processed products (aluminum, plastic, paper, steel)

How firms combine the inputs?

- **Production function -** the relationship between the quantities of inputs used and the maximum quantity of output that can be produced, given current knowledge about technology and organization

Production Function



- **Formally,**

$$q = f(L, K)$$

  - where q units of output are produced using L units of labor services and K units of capital (the number of conveyor belts).

Time and the Variability of Inputs

- **Short run -** a period of time so brief that at least one factor of production cannot be varied practically
  - ***Fixed input -*** a factor of production that cannot be varied practically in the short run.
  - ***Variable input -*** a factor of production whose quantity can be changed readily by the firm during the relevant time period
- **Long run -** a lengthy enough period of time that all inputs can be varied

Short-Run Production

- In the short run, the firm's production function is

$$q = f(L, \overline{K})$$

  - where q is output, L is workers, and $\overline{K}$ is the fixed number of units of capital.

Table 6.1 Total Product, Marginal Product, and Average Product of Labor with Fixed Capital

Capital, $\bar{K}$	Labor, L	Output, Total Product of Labor, Q	Marginal Product of Labor, $MP_L = \Delta Q/\Delta L$	Average Product of Labor, $AP_L = Q/L$
8	0	0		
8	1	5	5	5
8	2	18	13	9
8	3	36	18	12
8	4	56	20	14
8	5	75	19	15
8	6	90	15	15
8	7	98	8	14
8	8	104	6	13
8	9	108	4	12
8	10	110	2	11
8	11	110	0	10
8	12	108	–2	9
8	13	104	–4	8

Marginal Product of Labor

- **Marginal product of labor (MP_L) -** the change in total output, Δq, resulting from using an extra unit of labor, ΔL, holding other factors constant:

$$MP_L = \frac{\Delta q}{\Delta L}$$

Average Product of Labor

- **Average product of labor (AP_L) -** the ratio of output, q, to the number of workers, L, used to produce that output:

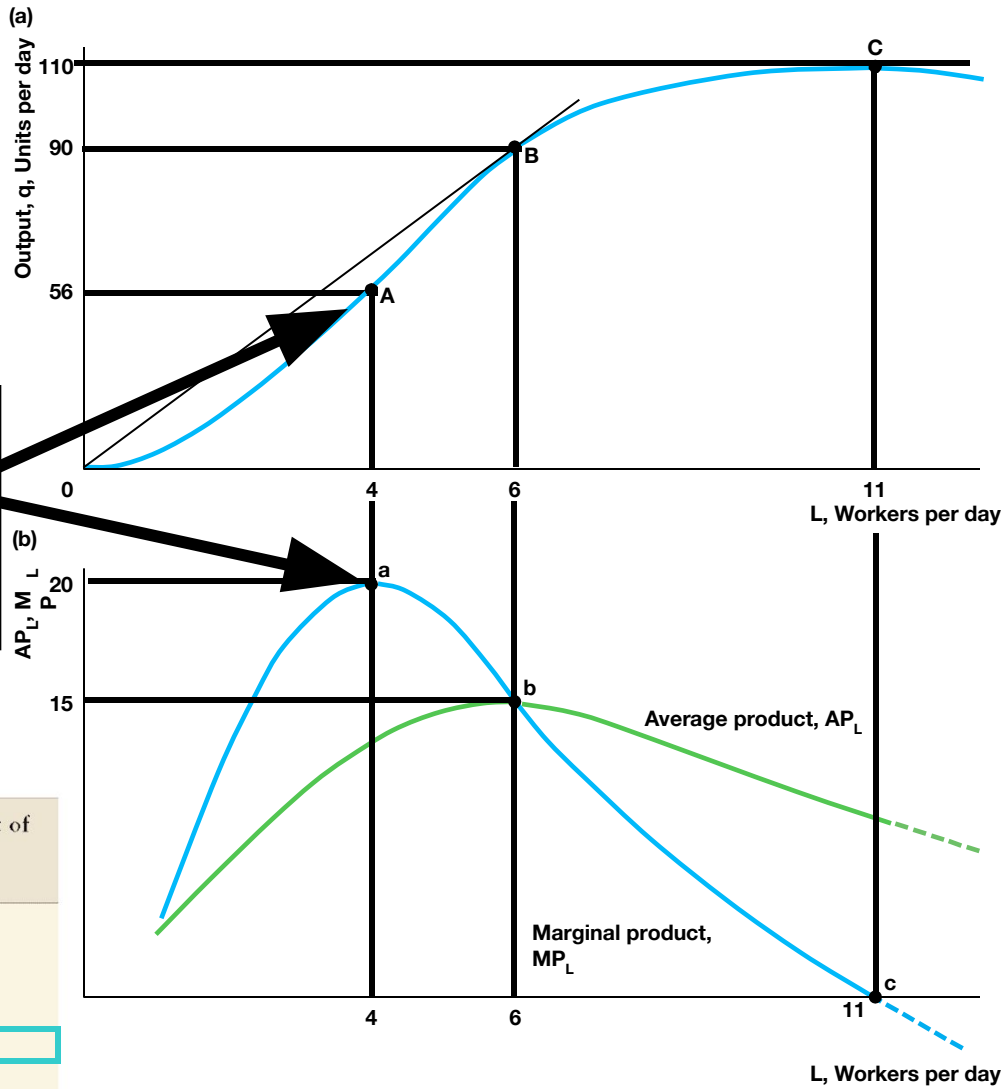
$$AP_L = \frac{q}{L}$$

Total Product of Labor

- **Total product of labor-** the amount of output (or total product) that can be produced by a given amount of labor

Figure 6.1 Production Relationships with Variable Labor

Diminishing Marginal Returns sets in!



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8	11	110	0	10
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8	13	104	–4	8

Law of Diminishing Marginal Returns

If a firm keeps increasing an input, holding all other inputs and technology constant, the corresponding increases in output will become smaller eventually.

- That is, if only one input is increased, *the marginal product of that input will diminish eventually*.

Market Structures

Market Structures

- Type of market structure influences how a firm behaves:
  - Pricing
  - Supply
  - Barriers to Entry
  - Efficiency
  - Competition

Market Structures

- Degree of competition in the industry
- High levels of competition – Perfect competition
- Limited competition – Monopoly
- Degrees of competition in between

Market Structure

- Determinants of market structure
  - Freedom of entry and exit
  - Nature of the product – homogenous (identical), differentiated?
  - Control over supply/output
  - Control over price
  - Barriers to entry

Market Structure

- Perfect Competition:
  - Free entry and exit to industry
  - Homogenous product – identical so no consumer preference
  - Large number of buyers and sellers – no individual seller can influence price
  - Sellers are price takers – have to accept the market price
  - Perfect information available to buyers and sellers

Market Structure

- Examples of perfect competition:
  - Financial markets – stock exchange, currency markets, bond markets?
  - Agriculture?

Market Structure

- **Advantages of Perfect Competition:**
- High degree of competition helps allocate resources to most efficient use
- Price = marginal costs
- Normal profit made in the long run
- Firms operate at maximum efficiency
- Consumers benefit

Market Structure

- **What happens in a competitive environment?**
  - New idea? – firm makes short term abnormal profit
  - Other firms enter the industry to take advantage of abnormal profit
  - Supply increases – price falls
  - Long run – normal profit made
  - Choice for consumer
  - Price sufficient for normal profit to be made but no more!

Market Structure

- **Imperfect or Monopolistic Competition**
  - Many buyers and sellers
  - Products differentiated
  - Relatively free entry and exit
  - Each firm may have a tiny ‘monopoly’ because of the differentiation of their product
  - Firm has some control over price
  - **Examples** – restaurants, professionals etc., building firms – plasterers, plumbers, etc.

Market Structure

- **Oligopoly – Competition amongst the few**
  - Industry dominated by small number of large firms
  - Many firms may make up the industry
  - High barriers to entry
  - Products could be highly differentiated – branding or homogenous
  - Non–price competition
  - Price stability within the market - kinked demand curve?
  - Potential for collusion?
  - Abnormal profits
  - High degree of interdependence between firms

Market Structure

- **Examples of oligopolistic structures:**
  - Supermarkets
  - Banking industry
  - Chemicals
  - Oil
  - Medicinal drugs
  - Broadcasting

Market Structure

- Measuring Oligopoly:
- **Concentration ratio** – the proportion of market share accounted for by top X number of firms:
  - E.g. 5 firm concentration ratio of 80% - means top 5 five firms account for 80% of market share
  - 3 firm CR of 72% - top 3 firms account for 72% of market share

Market Structure

- **Duopoly:**
- Industry dominated by two large firms
- Possibility of price leader emerging – rival will follow price leaders pricing decisions
- High barriers to entry
- Abnormal profits likely

Market Structure

- **Monopoly:**
- Pure monopoly – industry is the firm!
- Actual monopoly – where firm has >25% market share
- Natural Monopoly – high fixed costs – gas, electricity, water, telecommunications, rail

Market Structure

- **Monopoly:**
  - High barriers to entry
  - Firm controls price OR output/supply
  - Abnormal profits in long run
  - Possibility of price discrimination
  - Consumer choice limited
  - Prices in excess of MC

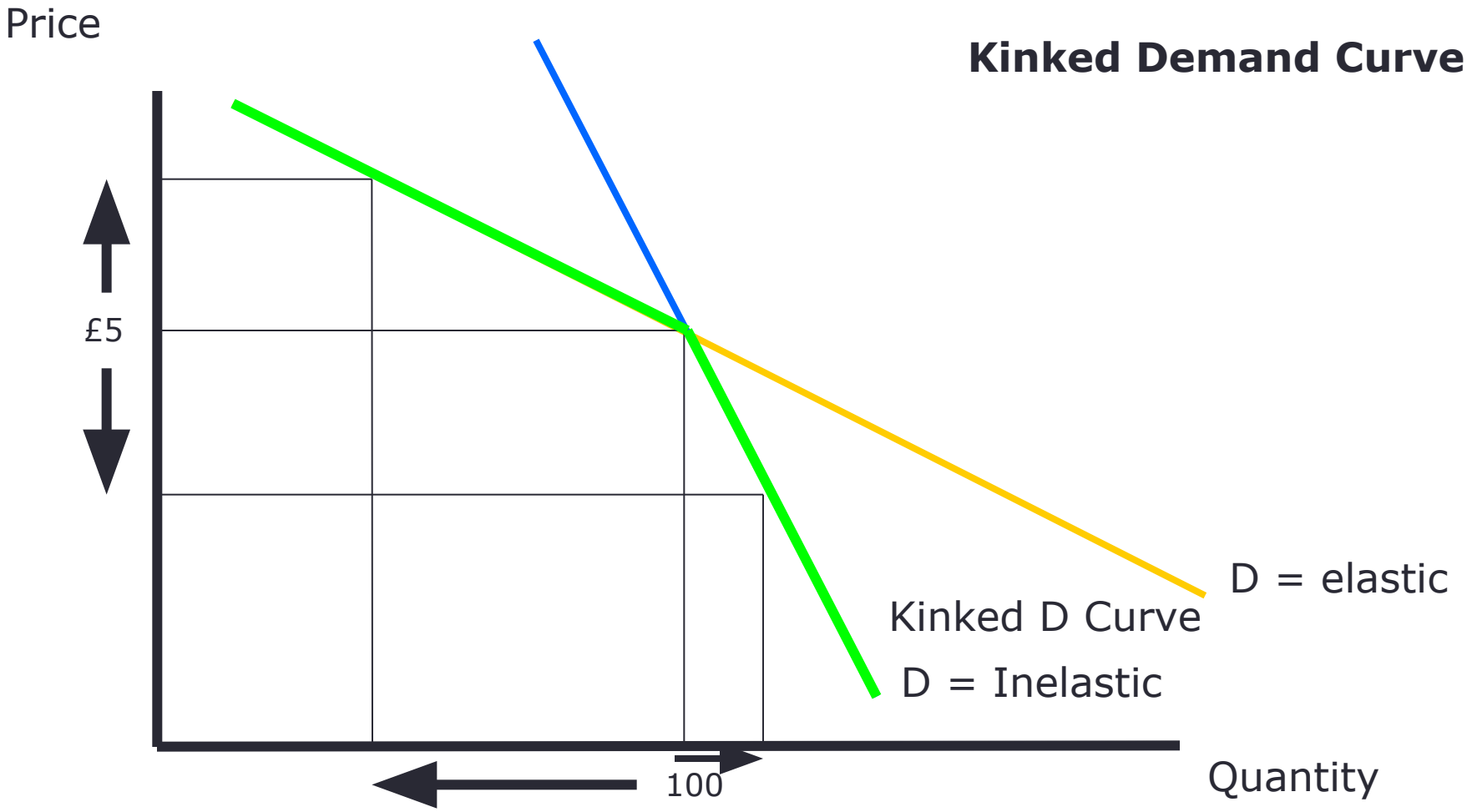
Market Structure

- **Advantages and disadvantages of monopoly:**
- **Advantages:**
  - May be appropriate if natural monopoly
  - Encourages R&D
  - Encourages innovation
  - Development of some products not likely without some guarantee of monopoly in production
  - Economies of scale can be gained – consumer may benefit

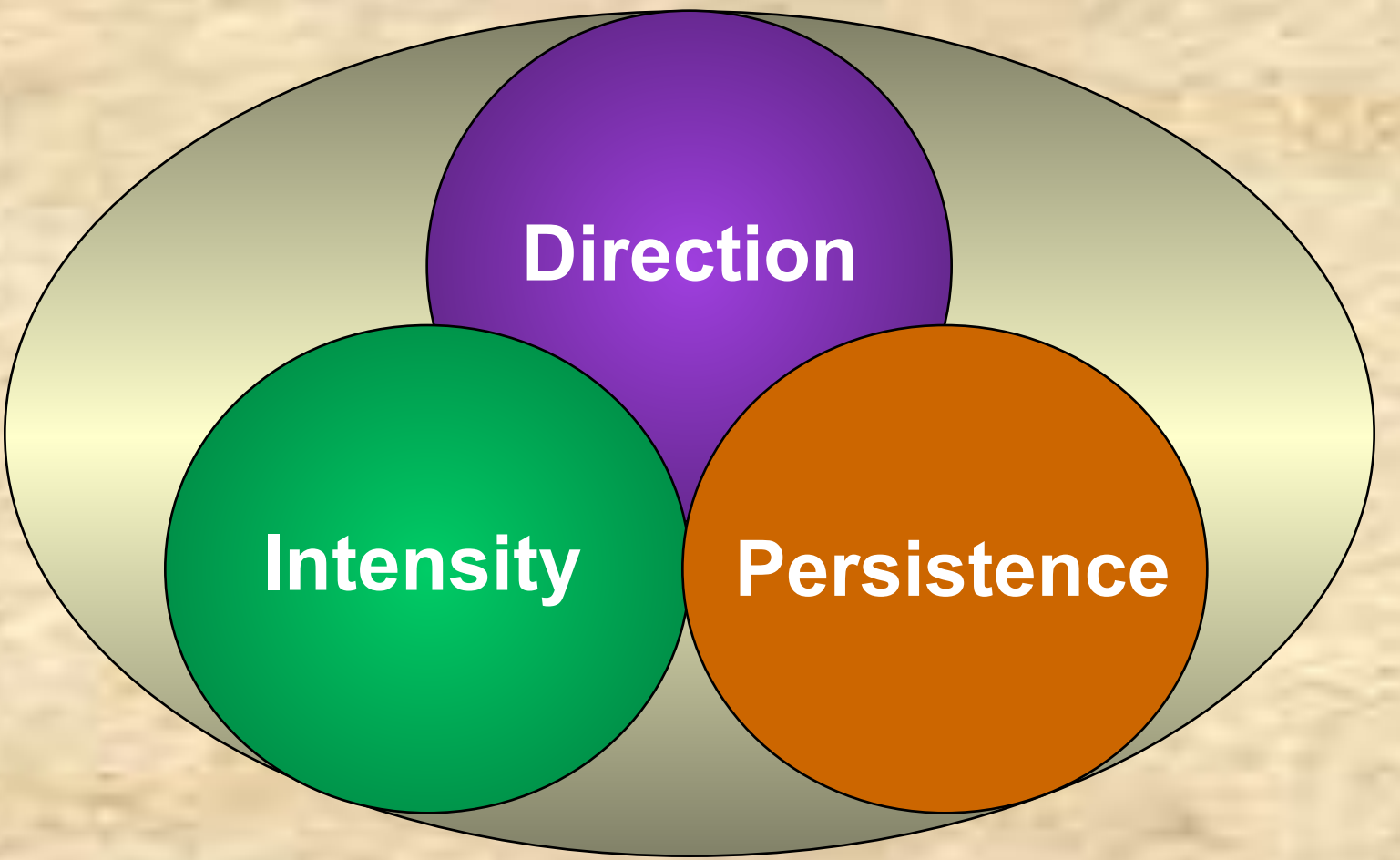
Market Structure

- **Disadvantages:**
  - Exploitation of consumer – higher prices
  - Potential for supply to be limited - less choice
  - Potential for inefficiency

Market Structure



What Is Motivation?



What is Motivation?

Motivation

The processes that account for an individual's intensity, direction, and persistence of effort toward attaining a goal.

Key Elements

1. **Intensity: how hard a person tries**
2. **Direction: toward beneficial goal**
3. **Persistence: how long a person tries**

Hierarchy of Needs Theory (Maslow)

Hierarchy of Needs Theory

There is a hierarchy of five needs—physiological, safety, social, esteem, and self-actualization; as each need is substantially satisfied, the next need becomes dominant.

Self-Actualization

The drive to become what one is capable of becoming.

Maslow's Hierarchy of Needs

Lower-Order Needs
Needs that are satisfied externally; physiological and safety needs.

Higher-Order Needs
Needs that are satisfied internally; social, esteem, and self-actualization needs.

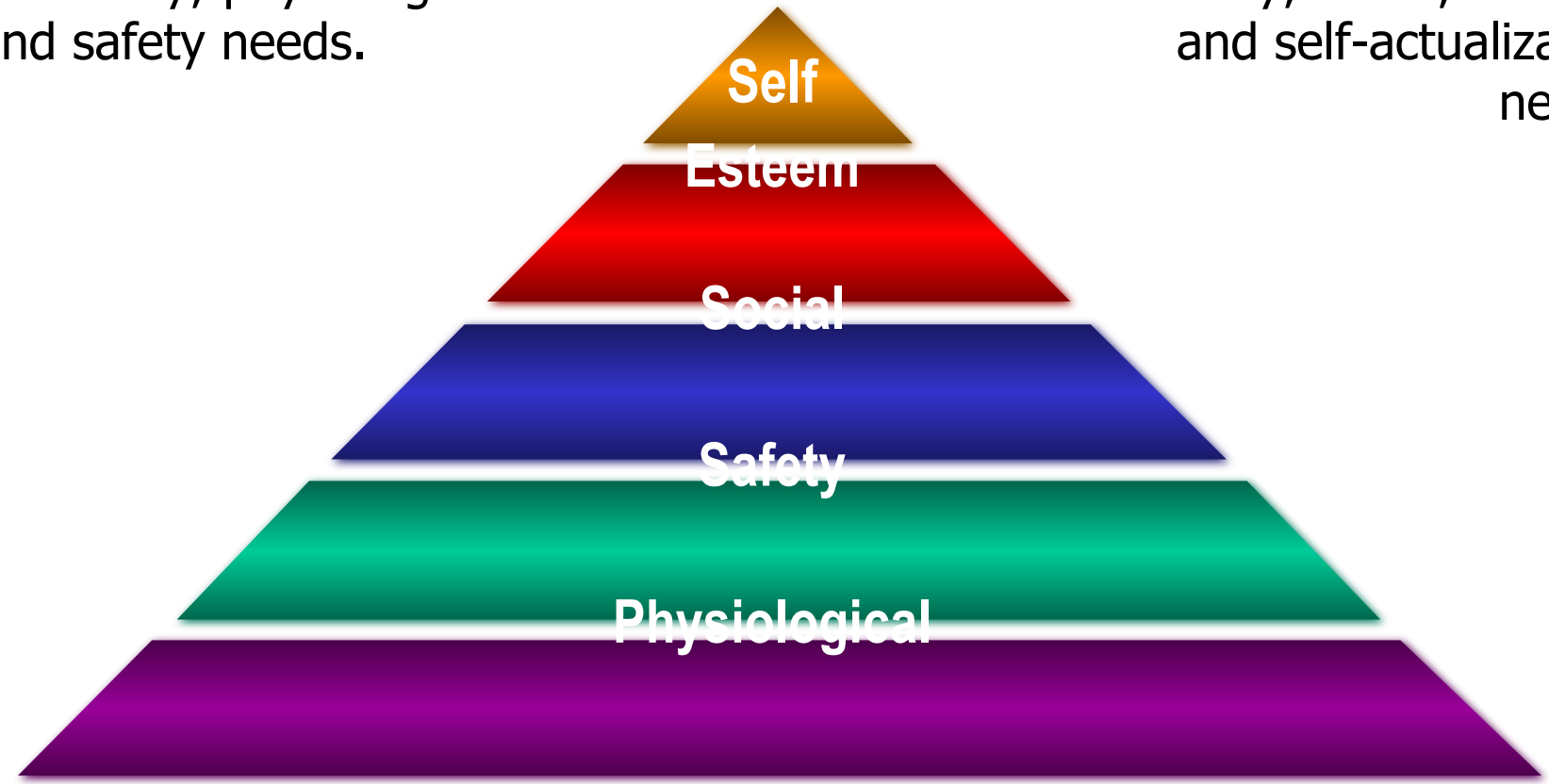


EXHIBIT 6–1

Assumptions of Maslow's Hierarchy

Movement up the Pyramid

- Individuals cannot move to the next higher level until all needs at the current (lower) level are satisfied.

- Individuals therefore must move up the hierarchy in order

Maslow Application:
A homeless person will not be motivated to meditate!

McGregor's Theory X and Theory Y

Theory X

- Traditional theory of human behaviour
- Management is responsible for organising-man,material,equipment and people-in the interest of economic end
- With respect to people-this is the process of directing, motivating, controlling, modifying their behavior to fit the needs of organisation.
- Without this active intervention- they would be passive
- he works as little as possible
- Inherently self-centred, indifferent to organisational needs
- Resistant to change

McGregor's Theory X and Theory Y

Theory Y

- The expenditure of physical and mental efforts in work is natural as play or rest. The average human being does not inherently dislike work
- External control and threat of punishments are not the only means to aline their behaviour with org. 's objectives. Man will exercise self direction and self control.
- Commitment to objectives is a function of reward associated with their achievements.
- Average human being under proper condition learns not only to accept , but to seek responsibilities.
- They exercise high degree of imagination, ingenuity and creativity to solve organisational problems.

Ouchi's Theory Z

Suggested five broad features

- Trust
- Strong bond between organisation and employees
- Emloyee involvement
- No formal structure
- Coordination of human beings

Carrot and Stick approach to motivation

Based on the 'Principles of Reinforcement'

Comes from the old story that the best way to make donkey move is to put the carrot out in front of him or jab him with a stick from behind.

Herzberg's Two-Factor Theory

Bottom Line: Satisfaction and Dissatisfaction are not Opposite Ends of the Same Thing!

Hygiene Factors:

- **Salary**
- **Work Conditions**
- **Company Policies**

Separate constructs

- Hygiene Factors---Extrinsic & Related to *Dissatisfaction*
- Motivation Factors---Intrinsic and Related to *Satisfaction*

Motivators:

- **Achievement**
- **Responsibility**
- **Growth**

Comparison of Satisfiers and Dissatisfiers

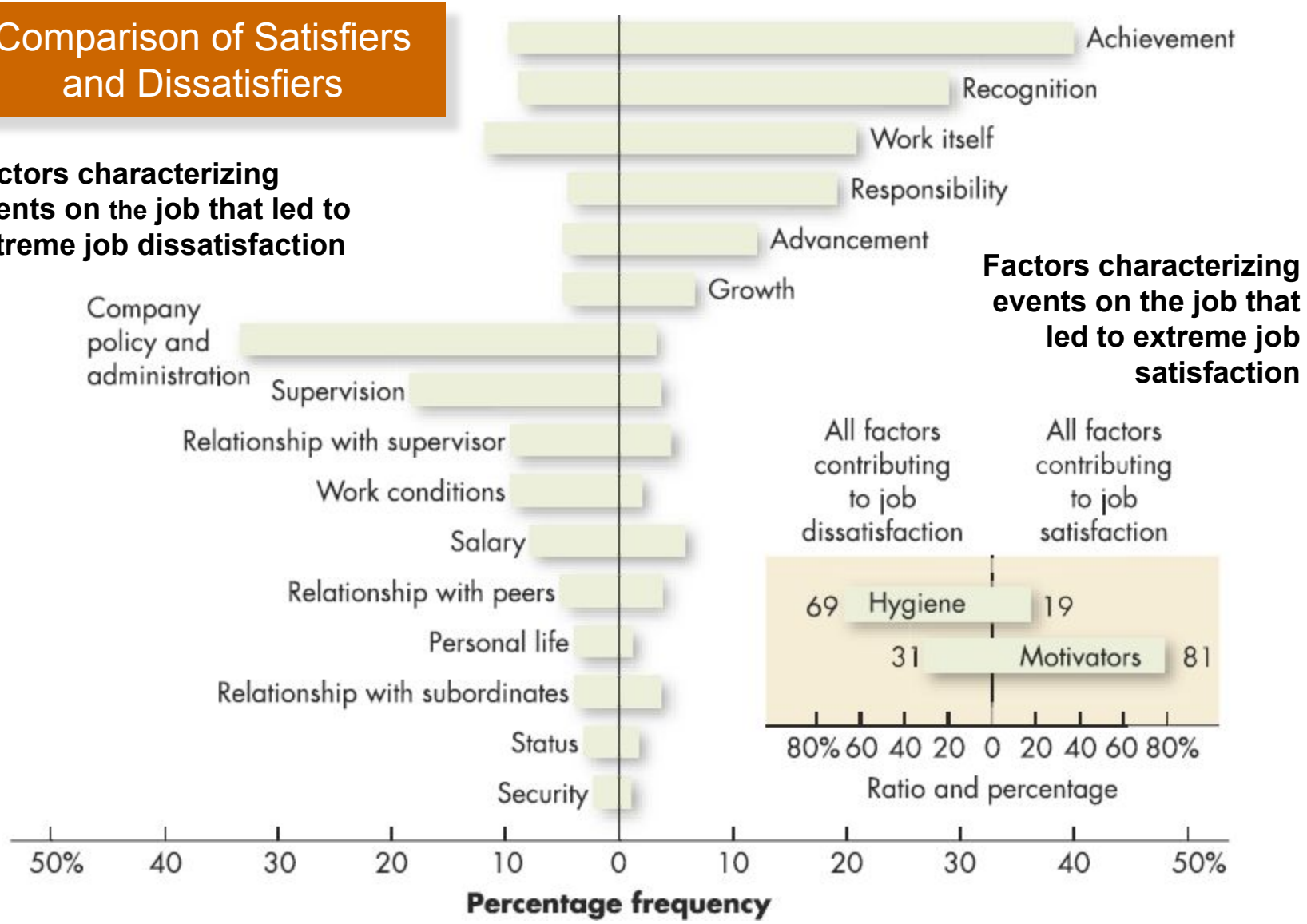


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EXHIBIT 6–2

Contrasting Views of Satisfaction and Dissatisfaction

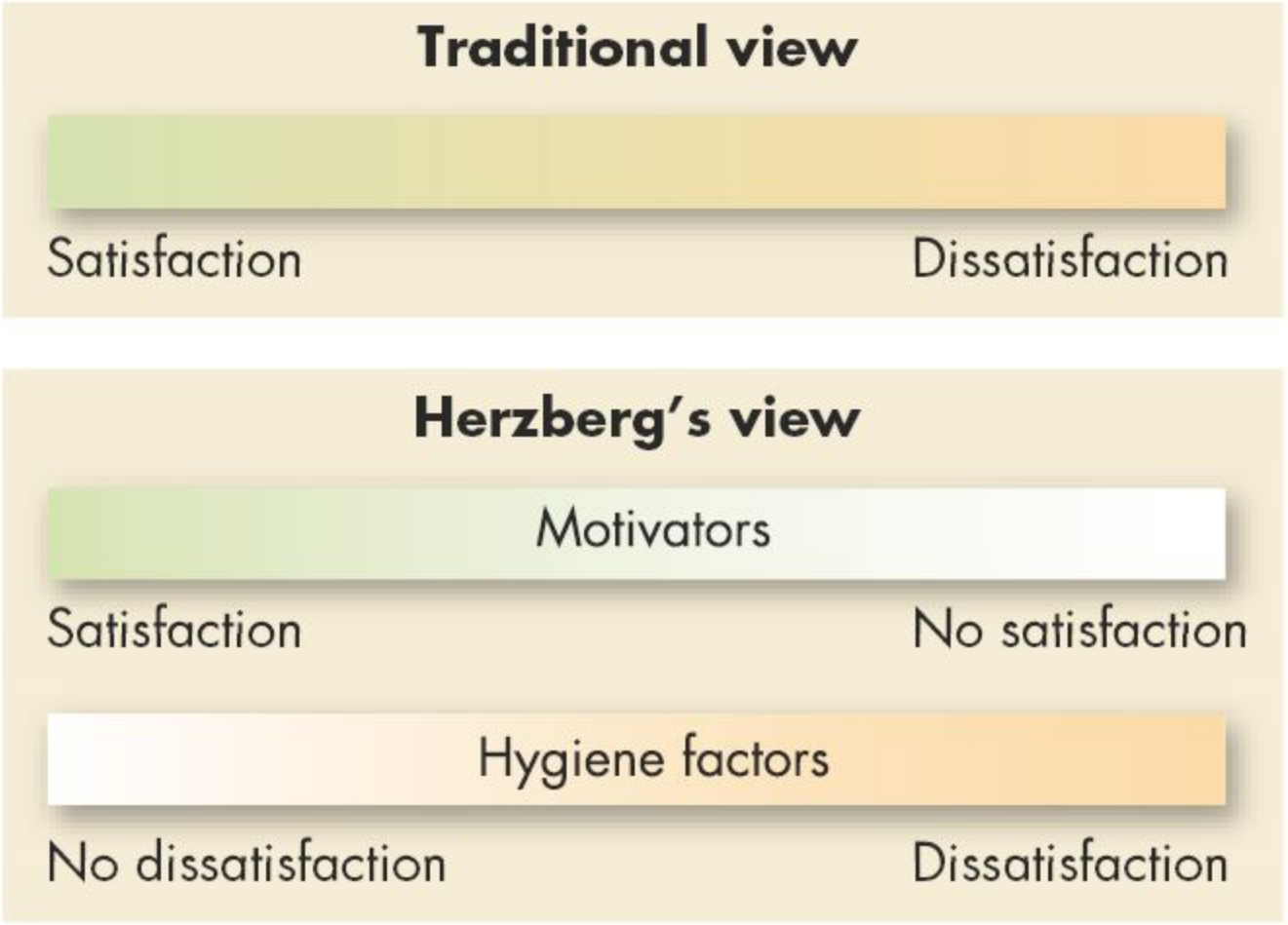

EXHIBIT 6–3