Three Metaphors for Organizations

- **Organizational Information Systems**
  - OIS support the needs of organizations
  - we need to understand organizations
    - what they are
    - how they work
  - mostly, we'll follow Alter, but not today
- **three views of organizations**
  - organizations as machines
  - organizations as organisms
  - organizations as cultures

- **Three Metaphors of Organization**
  - each metaphor suggests a way of thinking
  - none of them is absolutely right!
    - need to see all sides of the issues
    - useful in different circumstances
  - what varies?
    - historical period, relations to other disciplines, boundaries
  - implications for design
  - our questions for today:
    - how do these metaphors explain what organizations do?
    - how do they explain how people act in organizations?
    - how do they explain how organizations use information?

- **Similes and Metaphors**
  - metaphors are conceptual systems
    - a set of associations between one thing and another
    - framing ways of thinking
  - arguably, our brains are wired in terms of metaphors
    - Lakoff and Johnson, "Metaphors We Live By"
    - examples
      - time is money
      - argument is war
      - activities are containers
      - up is good, down is bad

- **Organizations as Machines**
  - basic idea
    - organizations are made up of many parts
    - these parts are put together to perform work
    - organizations transform inputs into outputs
      - e.g. raw materials to products
    - they do this more or less efficiently
      - efficiency can be measured and improved
    - studied and designed through *applied science*
    - observe, model, reason, predict
  - this model is not restricted to organizations
    - we often use machine analogies...

- **Basic Principles**
  - primary principles
    - structure
    - efficiency
    - measurement
  - the key is *repeatability*
    - first standardize, then optimize
    - the importance of interchangeable parts
    - not just components, but people too
organizations as machines

• link between structure and performance
  - some structures maximize organizational performance
    • making the most effective use of resources
  - certain functions seen as being effective work
    • production, sales
    • addressing customer needs
  - others are not
    • internal communication

organizations as machines

• machines have parts
  - “this is metric #5 grommit”
  - what’s significant about this view of parts?
    • we define equivalences between one part and another
    • all metric #5 grommets are created equal
    • parts can be substituted for each other
    • it’s easier to manage individuals as instances of a class
### History of the Machine View

- **Adam Smith (1776)**
  - *Wealth of Nations*
  - division of labor
- **Eli Whitney (1801)**
  - demonstrated the value of mass production
- **Charles Babbage (1832)**
  - scientific approach and the importance of planning
- **Frederick Taylor**
- **Herb Simon**

### Scientific Management

- **Frederick Taylor (1856-1915)**
  - founder of "scientific management"
- **Taylor’s principles**
  - shift responsibility for organizing upwards
  - use scientific methods to determine best way to work
  - select the best person for the job
  - train them to work efficiently
  - monitor performance
- **Hero or villain?**

### Machines for What?

- **what do machines do?**
  - turn some input into some output
- **what do organizational machines do?**

![Diagram of machines and decision-making process]

### Decision-Making Machines

- **what do machines do?**
  - turn some input into some output
- **what do organizational machines do?**
  - turn information into decisions
  - supporting efficient communication up and down

### Herb Simon

- **a renaissance figure**
  - computer science, cognitive science, psychology, economics...
- **the rational model of organizations**
  - principal components
    - formal goals
    - operations to achieve them
    - evaluating costs and benefits
    - does this seem familiar, perhaps?
  - *bounded* rationality
    - no one has perfect knowledge
    - continual process of adjustment and replanning

### Strengths and Weaknesses

- **can be very effective, in certain situations**
  - fast food, automated production, safety-critical
  - situations where the parameters are known
- **but...**
  - assumptions of homogeneity
    - everyone shares the goals...?
  - encourages a "mindless" attitude
  - hard for people to feel involved
  - not suitable for all kinds of work
    - how about advertising? law?
information and systems

- what's the role of information systems?
  - enforcing standardization
  - conveying information through the organization
  - monitoring and measuring performance
  - maximizing efficiency

example: UCI

- how is UCI organized structurally?
- what are the formal processes?
- how is standardization achieved?
- how do information systems support them?

organizations as organisms

- basic idea
  - organizations are made up of individuals who have different needs
    - it's about balance and harmony, not about regimentation
    - organizations operate within an environment with which they interact
- going beyond machines...
  - recognizing the needs of individuals
  - recognizing the diversity of organizational elements
  - recognizing the diversity of organizational forms

individual needs

- Hawthorne studies
  - Hawthorne plant of Western Electric, 1920s
  - from Taylorism to motivations
    - expanding focus to look at social attitudes and preoccupations
    - human needs in the workplace
      - informal organization alongside the formal
      - friendship, social bonding, self-respect
      - biological needs, just like food and shelter

environment

- organizations are environments
  - settings in which human actions take place
- organizations do not stand alone
  - they operate in an environment
    - factors?
  - they depend on the environment and react to it
    - success depends on adaptation, not regularization
    - no "one best way" of organizing
- how does this work?
  - what are the mechanisms by which organizations respond to their environment?

key concepts

- homeostasis
  - self-regulation
  - maintaining a steady state
- differentiation and integration
  - think of cells and organs...
- requisite variety
  - internal complexity must match external complexity
- evolution
  - variation and selection
  - driven by the (changing) environment
strengths and weaknesses

- a broader view
  - not just the organization but the environment
  - organizations as processes not just structures
  - attending to social and organizational needs
- accounting for diversity
  - explains different organizational forms & strategies
  - focus on innovation
- very concrete
  - hard to generalize
  - metaphor may be too compelling

information and systems

- emphasis is on interaction and adaptation
  - information about the environment
    - what’s outside the organization: customers, clients, competitors, business trends...
  - information needs change
    - the role that information plays can change too
    - as the organization evolves, information systems must evolve too
    - information systems need to be designed to accommodate change

example: UCI

- what different constituencies operate within UCI?
- what sets of goals do they each have?
- what else is in the environment with which UCI interacts?
- how is balance maintained?
- how does UCI evolve?

organizations as cultures

- what is “culture”?
  - Beethoven’s Fifth?
  - E. coli?
  - a series of novels by Iain M. Banks?
  - the other meaning is harder to define...

- systems of meaning (the “web of signification”)
- Western culture, for example:
  - emphasizes personal achievement
  - values practicality
  - sets great store by wealth and possessions
- these are all values and meanings that we associate with features of the world around us
  - the “meaning” of personal wealth is culturally defined
- the value of objects or actions
  - the material value
  - the symbolic value

organizations as cultures

- organizations are cultural phenomena
  - they exist within national cultures
  - the means through which cultural ends are achieved
    - e.g. wealth and status
    - organizations are not a feature of agrarian societies...
- organizations reflect cultural expectations
  - “job for life” or hopping from place to place
  - stability or “hotelling” / “hot desking”
  - innovation or tradition
  - personal responsibility or following orders
  - teamwork or individualism
organizational cultures

• what do they make you think of...
  - Ben and Jerry’s?
  - Chase-Manhattan?
  - foobar.com?
  - Hewlett-Packard?
  - Microsoft?

• where do they come from?
  - cultures reflect history
    • meanings evolve over time
    • ideas become habits become traditions
      - attain more and more symbolic value until perhaps that’s all that’s left!
      - when does a meeting become a ritual?
  - cultures reflect individuals
    • the dynamic manager, the charismatic leader
      • how much of Microsoft is Bill Gates?

strengths and weaknesses

• important to recognize role of belief systems
  - paying attention to symbolic value
  - helps us question assumptions
  - insight into what happens when organizations interact
• dangers
  - culture isn’t homogeneous
  - culture is always changing
  - value-laden

information and systems

• systems reflect values
  - the processes
    • how does this reflect our organizational values?
      - customer-first, quality, assessing environmental impact...
  - information systems too
    • examples?
    • information has symbolic as well as material value
• cultural “fit” is important
  - again, the goal is not just to understand what the other guy does, but to understand his point of view

example: UCI

• what are UCI’s cultural values?
• how are those expressed in UCI’s structure?
• how are those expressed in UCI’s processes?

other examples?
**summing up**

- each metaphor tells you part of the story
  - internals vs externals
  - actions vs attitudes
  - wholes vs parts
- each reveals something about information
  - the roles that information can play
  - the stability & partiality of representations
  - how information reflects assumptions and beliefs
- all three are relevant simultaneously
  - it’s a question of looking through the right lenses

**what’s next**

- Friday
  - discussion section
- next week:
  - Monday’s a holiday (bummer!)
  - Wednesday: basic concepts in organizations
  - Read first two chapters of Alter BEFORE the class