Resource Management:
INSTITUTIONS AND INSTITUTIONAL DESIGN

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Understanding institutional diversity:

basics of the action situation

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Literature

Ostrom, Elinor 2005, *Understanding Institutional Diversity*, Princeton University Press, Princeton, Ch 1-2

- Understanding the Diversity of Structured Human Interactions
- Zooming in and Linking Action Situations

What are institutions?

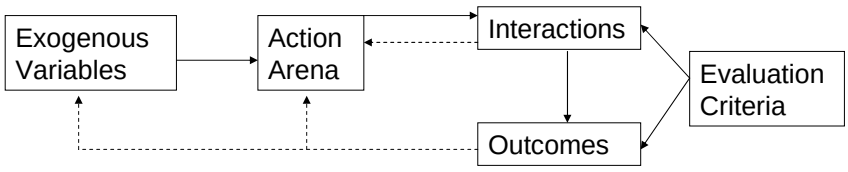
- Institutions are the prescriptions that humans use to organise all forms of repetitive and structured interactions, including those within families, neighbourhoods, markets, firms, sports leagues, churches, private associations, and governments at all scales
  - Great diversity of institutions
  - Great diversity of scientific approaches
  - IAD (institutional analysis and development) framework

Holons

- The term holon may be applied to any stable sub-whole in an organism or social hierarchy, which displays rule-governed behaviour and/ or structural Gestalt constancy
  - Environment
  - System
  - Sub-system

In repeated layers: multilevel complex systems

Holon: The action arena

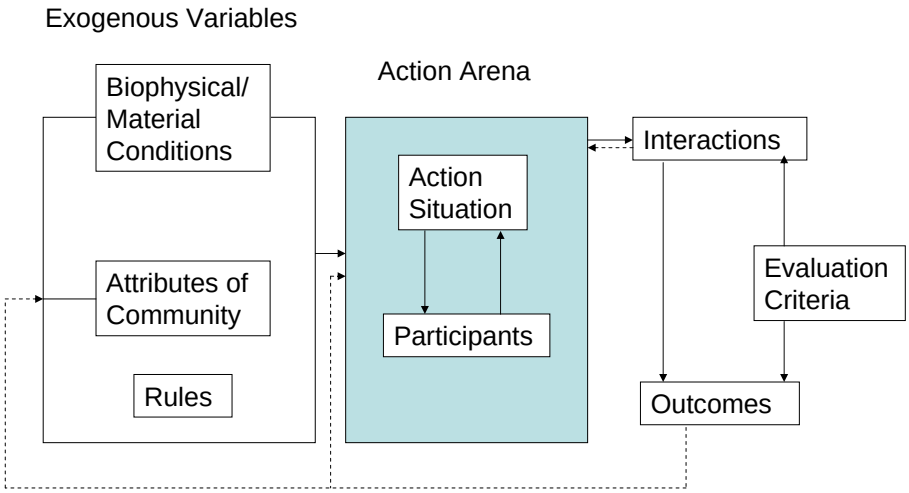


The action arena will be the focal unit for our discussion

Examples of evaluation criteria:

- **Positive utility of outcome**
- **Outcome seen as unfair or inappropriate**
- **Other feasible procedures will give more utility**
- **Procedures used seen as unfair**

The environment of action situations



The action arena

The action situation:

- Positions
- Potential outcomes
- Available actions and action-outcomes linkages
- Control over outcomes
- Information generated in the situation
- Cost-benefit attached to actions and outcomes

The participant (individual or corporate unit)

- Preferences
- Status/ command of resources
- Individual attributes
  - Age, sex, education, culture, etc
- # participants in the situation

Rules I

- Rules, written or unwritten, may be used about
  1. Regulations (prescriptions, prohibitions, permissions)
  2. Instructions/ recipes/ strategies
  3. Precepts/ advice for moral behaviour (norms)
  4. Principles/ laws of nature
- Regulations provide the participants with a shared understanding of what actions/ outcomes are prescribed/ prohibited or permitted

Rules II

- Rules are the result of explicit or implicit efforts to create order and predictability among humans by
- Creating positions who are required, permitted or forbidden to take classes of
- Actions in relation to outcomes that are required, permitted or forbidden, or face the likelihood of being
- Monitored and sanctioned in a predictable fashion

Rules III

- Origin of rules
  - Self-organised groups
  - Externally imposed rules
  - Evolution (from problem solving to designed rules)
- Working rules
  - Rules justifies actions
- Predictability of rules
  - Depends on shared meanings since rules are not self-formulating, self-determining, or self-enforcing
  - System of enforcement
  - System of creation

Biophysical and material conditions

Attributes of goods produced, distributed or consumed
- Excludability of outcomes
  - Free riders
- Divisibility of outcomes (subtractability)
- Transferability of utility

Classification of goods (bads), entities that people want to obtain (or avoid)

- **Subtractability**
  - Intrinsic
  - Technology dependent
  - Depletable or reproducible
- **Excludability**
  - Intrinsic
  - Technology
  - Political choice

		Sub tract ability	
		Low	High
Ex clud ability	Low	Public	?
	High	?	Private

Community and culture

COMMUNITY
- Size and composition of population
- Values in the local culture
- Common knowledge and understanding of various action situations
- Degree of homogeneity of preferences

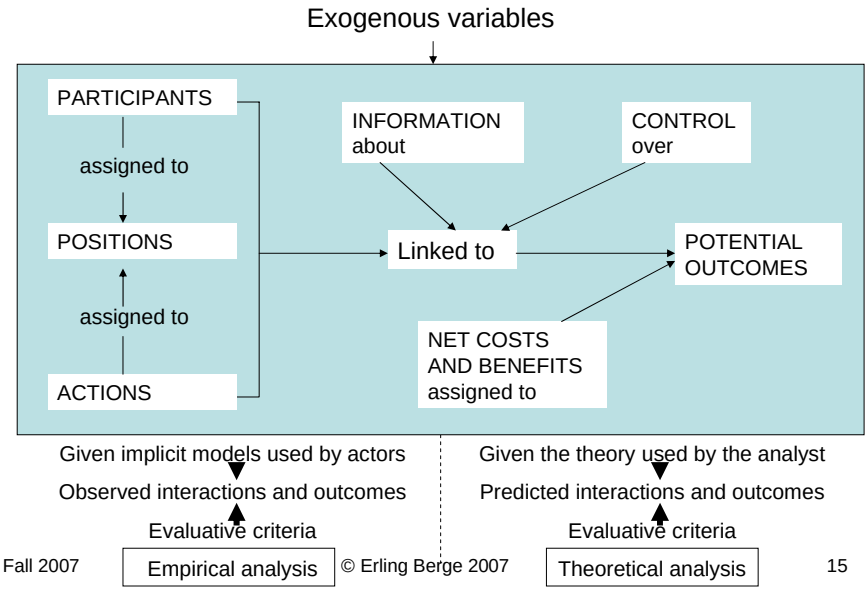
CULTURE
- Affects costs of interaction
- Reputation, trust, etc

LANGUAGE

Action situations

- Two or more individuals facing a set of actions that jointly produce outcomes can be analysed by studying
  - Participants
  - Positions
  - Potential outcomes
  - Available actions and action-outcomes linkages
  - Control over outcomes
  - Information generated in the situation
  - Cost-benefit attached to actions and outcomes
- They can be evaluated empirically by observation of interactions and outcomes (use of implicit models)
- They can be evaluated theoretically by predicting interactions and outcomes (use of theory)

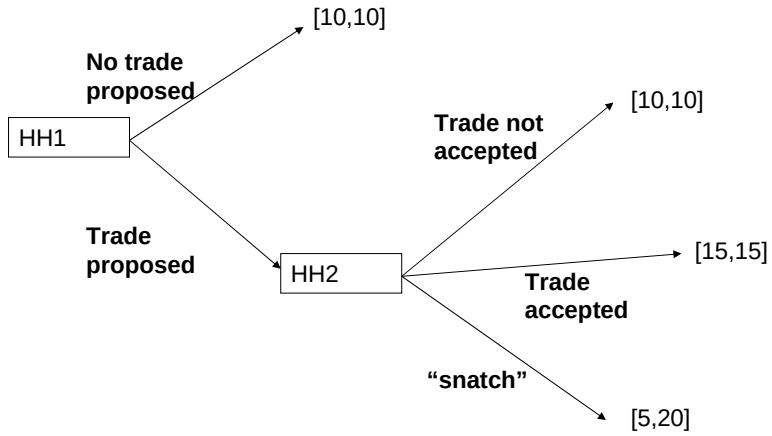
The internal structure of action situations



The "snatch" game

- "state-of-nature" = no rules apply, no common understanding or norms
- Household 1 (HH1) produce 10 bags of potatoes
- Household 2 (HH2) produce 10 chickens
- Both HH1 and HH2 prefer to eat chicken and potatoes
- In the "state-of-nature" they have a social dilemma:
  - That is a situation where the private return to an optimal strategy based on the assumption that all follow their optimal strategy without regard to what others do is greater than a share from the joint product of a cooperative strategy

The “snatch” game: illustration of action situation



The working parts I

- **Participants**
  - Numbers, individuals or teams
    - A team require collective action, members intend a joint product or have a common purpose
  - Groups, aggregates of individuals or teams
    - If there is variable strength of interest we may get frequency dependent behaviour
  - Attributes: sex, age, education, ...
- **Positions authorise actions**
  - Roles, participants may have more than one
  - Roles allows, prescribes of prohibit actions
  - Participants may or may not choose entry or exit from positions

The working parts II

- **Potential outcomes**
  - Status quo outcome
  - Biophysical outcomes, external payoffs, internal valuations may have to be assessed separately
  - The opportunity of a situation: range of value in outcomes
- Available actions and action-outcomes linkages
  - Actions: actors choose one from the set of possible actions. The choice of no action is an option
  - Action-outcome linkages: action(s) will "produce" the outcome to some degree (transformation function), control variables
  - Certainty, link is known
  - Risk, probability distribution of outcomes are known
  - Uncertainty, the relation between action and outcome is indeterminate (interdependent actions, number of possible outcomes too large)
  - Uncertainty, risk and certainty are structural characteristics of the situation (not dependent on information)

The working parts III

- Control over outcomes
  - Power = control * opportunity
- Information generated in the situation
  - Complete
    - Perfect: all actions known to all participants
    - Imperfect: the complete situation but not the decisions of other participants
- Incomplete "Who knows what at what juncture"
  - Opportunistic behaviour: deceitful behaviour to improve ones own outcome to the detriment of others
  - Asymmetric information problems
    - Principal — agent problems
    - Moral hazard — whenever risk is to be shared

The working parts IV

- Cost-benefit attached to actions and outcomes
  - Material costs from choosing particular actions
  - Internal valuations of particular actions
  - Material rewards from particular outcomes
  - Internal valuations of particular outcomes
  - Material or internal valuations of the action path chosen
  - Internal valuations: shame, regret, joy, guilt
  - Decisions based on net value (utility)
- Number of repetitions of action situation
  - One time, finite number of times, indefinite repetition
  - Tit-for-tat in symmetric social dilemmas
  - Heuristics for asymmetric social dilemmas

Linking Action Arenas

- Sequential linkages of arenas
  - Facilitates building of reputation for reciprocity
- Simultaneous arenas
- Organisational links, (appears as trees or lattices) long complex chains where output from one arena is input to another
- Competitive links
  - Adaptations to other participants
  - Market interactions (rule governed competition)
- Levels of action arenas: rules at deeper levels are part of the structure of action arenas at a given level
  - Operational — interpreting rules
  - Collective-choice — making rules
  - Constitutional choice — making rules about rules making
  - Meta constitutional choice — procedures for making rules about rules making

Levels of analysis

Environmental characteristics that directly affects the situation

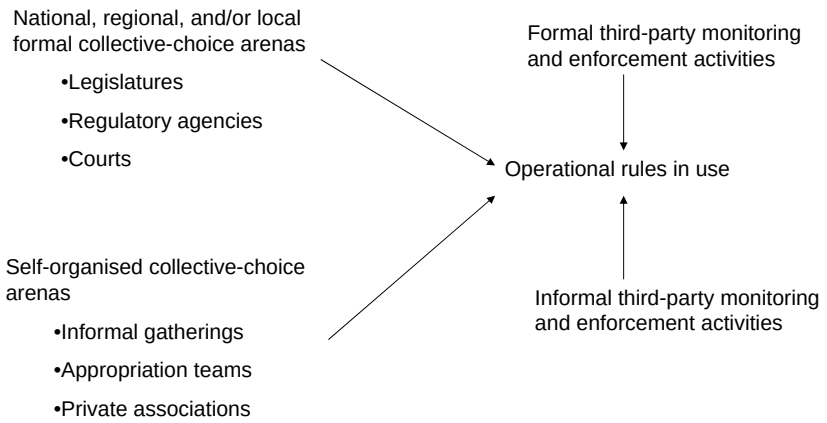
For level 1-3:
- RULES IN USE
- BIOPHYSICAL WORLD
- COMMUNITY

For level 4:
- BIOPHYSICAL WORLD
- COMMUNITY

Individual actions taken that directly affects state variables in the world or the situation:

1. OPERATIONAL SITUATION
   - Provision, production, distribution, appropriation, assignment, consumption
2. COLLECTIVE CHOICE SITUATION
   - Prescribing, invoking, monitoring, applying, enforcing
3. CONSTITUTIONAL CHOICE SITUATION
   - Prescribing, invoking, monitoring, applying, enforcing
4. METACONSTITUTIONAL CHOICE SITUATION (no rules in use)
   - Prescribing, invoking, monitoring, applying, enforcing

Formal and informal collective-choice arenas



Level shifting strategies

- Contemplating changes in the rules defining permitted, prohibited and proscribed actions in operational situations
- The cost (including transaction costs) of actually changing the rules varies dramatically from arena to arena
  - Costly formal requirements may lead to informal de facto changes at the operational level

Predicting and evaluating outcomes

- Predicting
  - Only very simple situations allow strong predictions
  - Interdependent decisions, linked arenas, communication, learning, changes in strategy: all make it difficult to predict
- Evaluating
  - Economic efficiency, benefits from reallocation of resources
  - Equity, matching ability and requirements, equality of outcomes
  - Adaptability, resilience (from ecosystem), and robustness (from engineering)
  - Accountability
  - Conformance to general morality
  - Needs for trade-offs