

Building Networks of Action Situations for the Analysis of Policy Processes and Institutions

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From Games to Action Situations to Networks

- **Game models of strategic interaction** require analysts to define all rules of the game: players, available choices, sequence of choice, available information, outcomes, utility, decision process (typically expected utility optimization)
 - Analysts must also specify conditions for equilibrium
 - Useful to understand conflicts of interest, including individual/social
- In IAD Framework an **action situation** generalizes a game, allowing the following additional opportunities:
 - Players are boundedly rational, and need not always optimize exp. utility
 - Role expectations and other normative considerations in costs/benefits
 - Participants can endogenously change the rules of the game, esp. at “higher” levels of analysis: collective choice and constitutional choice
 - Contextual factors (nature of goods, rules-in-use, and attributes of community) jointly construct action situations, and these contextual factors are set by processes in other action situations

The IAD Framework

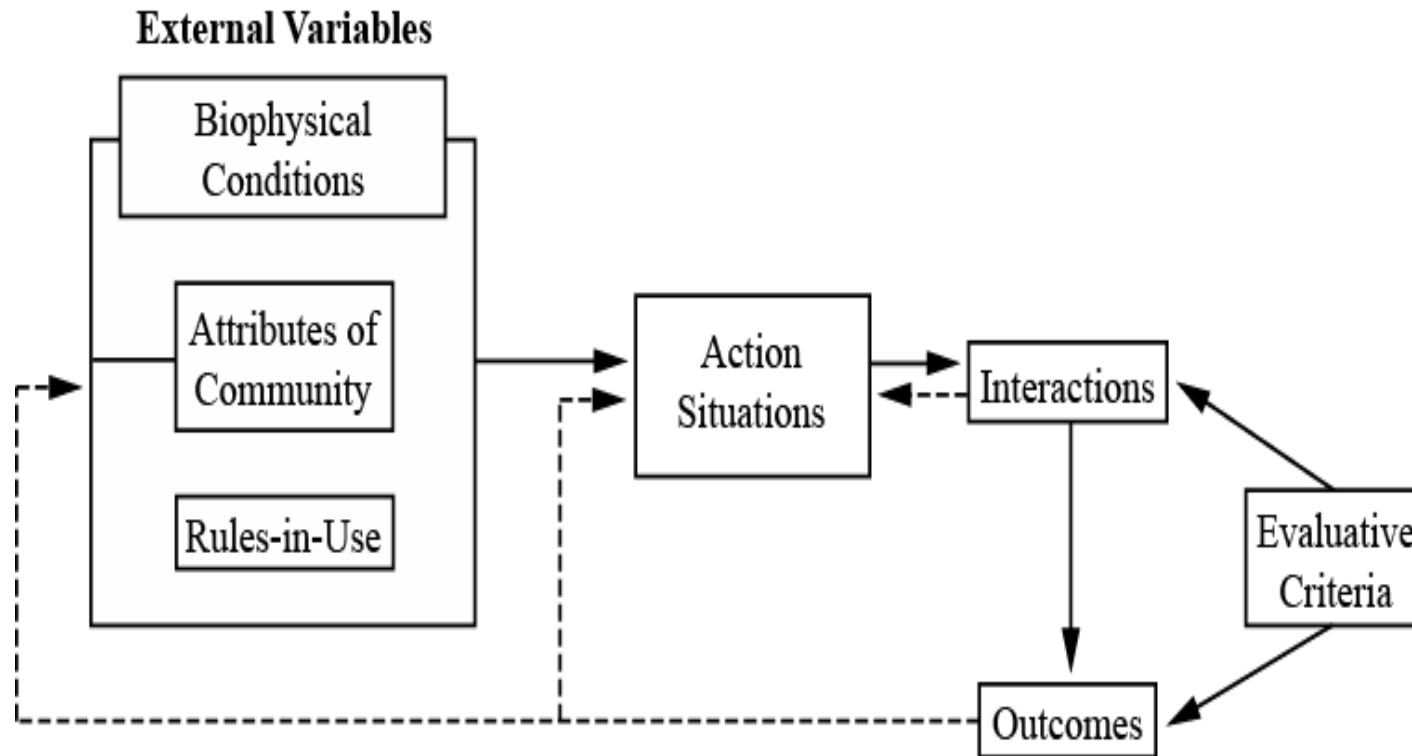


Figure 2. A framework for institutional analysis. Source: Adapted from E. Ostrom, 2005: 15.

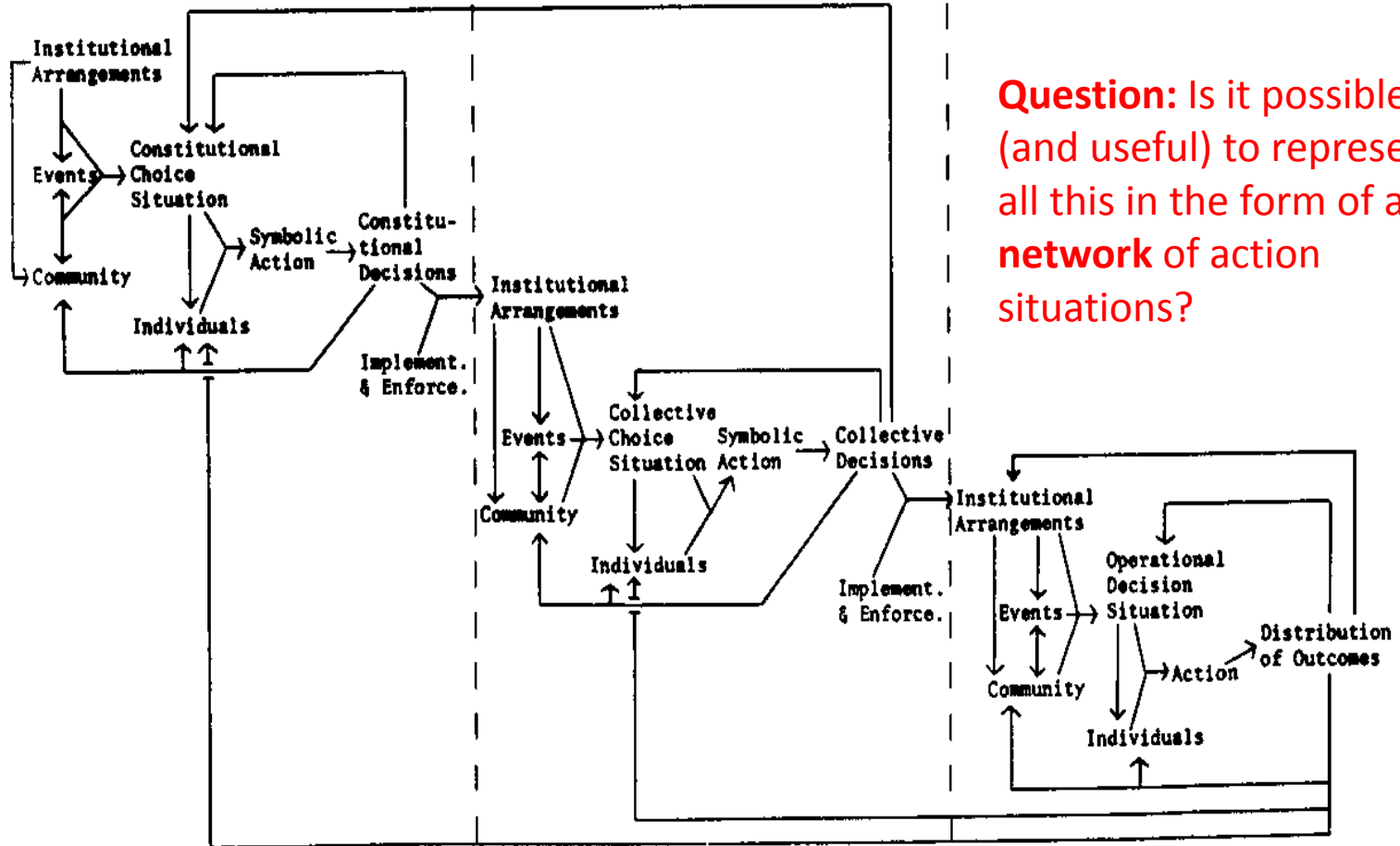
Everything that affects the focal action situation **comes from somewhere else** in the framework.

Constitutional Choice Level

Collective Choice Level

Operational Level

Additional complication: We may have multiple action situations at each level of analysis.



Question: Is it possible (and useful) to represent all this in the form of a **network** of action situations?

Figure 2 Three Levels of Institutional Analysis

Goal of this project:

Facilitate systematic investigation of how simultaneously occurring decision processes interact with each other to shape governance systems and policy implementation.

Definition of adjacency in action situations:

Action situation Xi is adjacent to Y if

1. the outcome of Xi directly influences the value of one or more of the working components of Y;
2. Resources flow directly from Xi to Y (or vice versa?);
3. The outcome of Xi satisfies a function necessary for the function completed in Y (or vice versa?).

A network of adjacent action situations (NAAS) can be constructed on the basis of this adjacency relationship.

- Action situations are the **nodes**;
- **Connections** via one of three general options:
 1. structural changes in rules,
 2. resource flows,
 3. functional stages of a policy process.

Too Many Options?: Structure, Function, Process

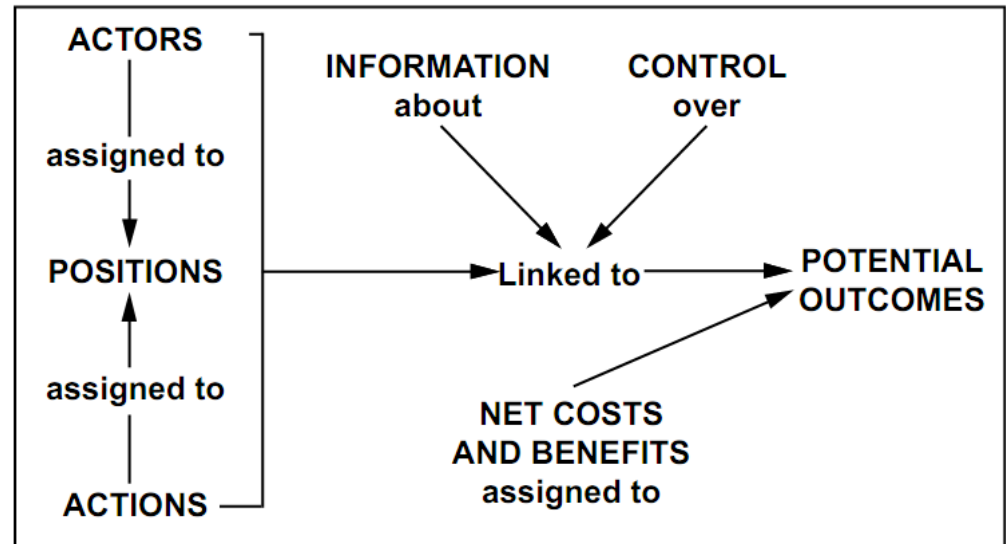
1. **Structural Linkages**: outputs of Xi determine **working components** of Y
 - Generic example in *PSJ* article
 - But this would include many different kinds of links
2. Classify action situations by **governance function**
 - Identify which **actor types** are involved in each function
 - Examples in *PSJ* article of lobster fisheries, development aid, and the faith-based initiative in U.S. welfare policy
 - For each case I collected functions & actors together as needed
3. **Process**: flows of resources, information, or rules
 - Locate action situations in **stages** of policy process?
 - Distinguish Direct and Intermediate **Services** and identify **stakeholders** primarily involved in each type of service
 - Represent in form of **systems dynamics** model?

Question on Network Design

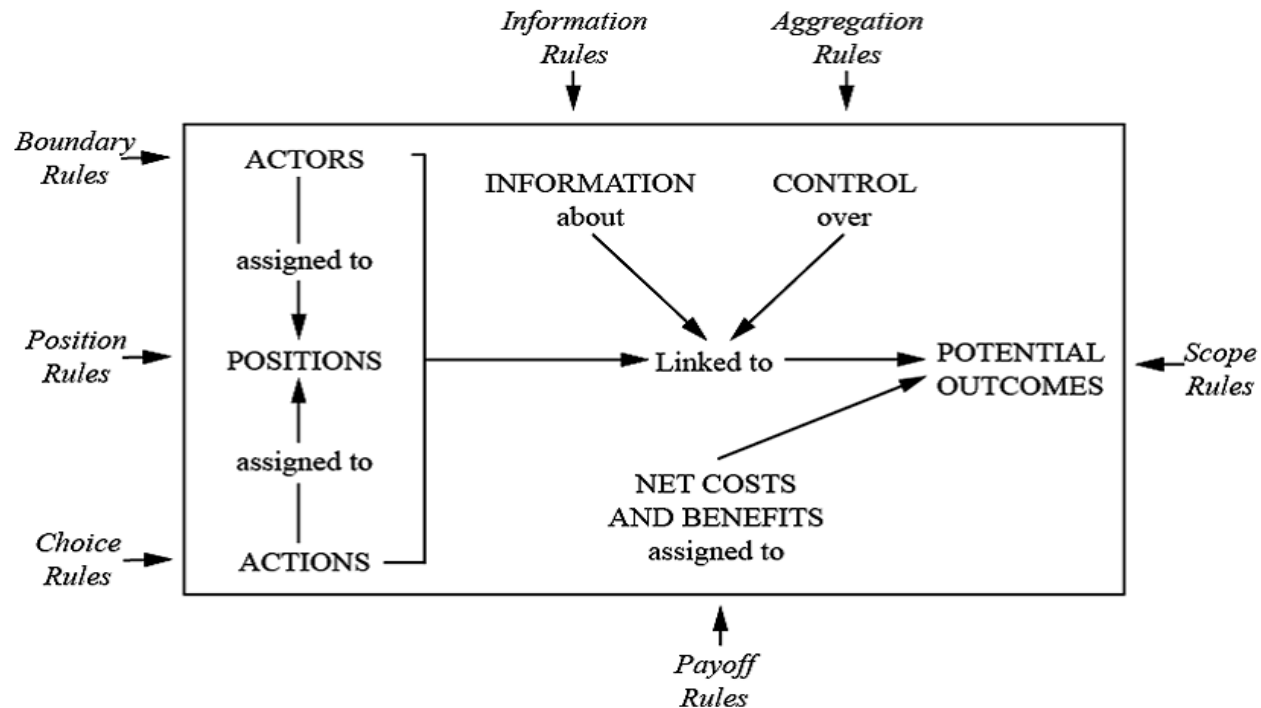
- Do I need to pick one primary mode of connections between action situation nodes to build a network model?
- OR is it possible to find some way to integrate connections via structure, process, and function into a broader representation?

Links via Structure

Working components of an action situation constitute its structure



Rules link one action situation to another (adjacent) one



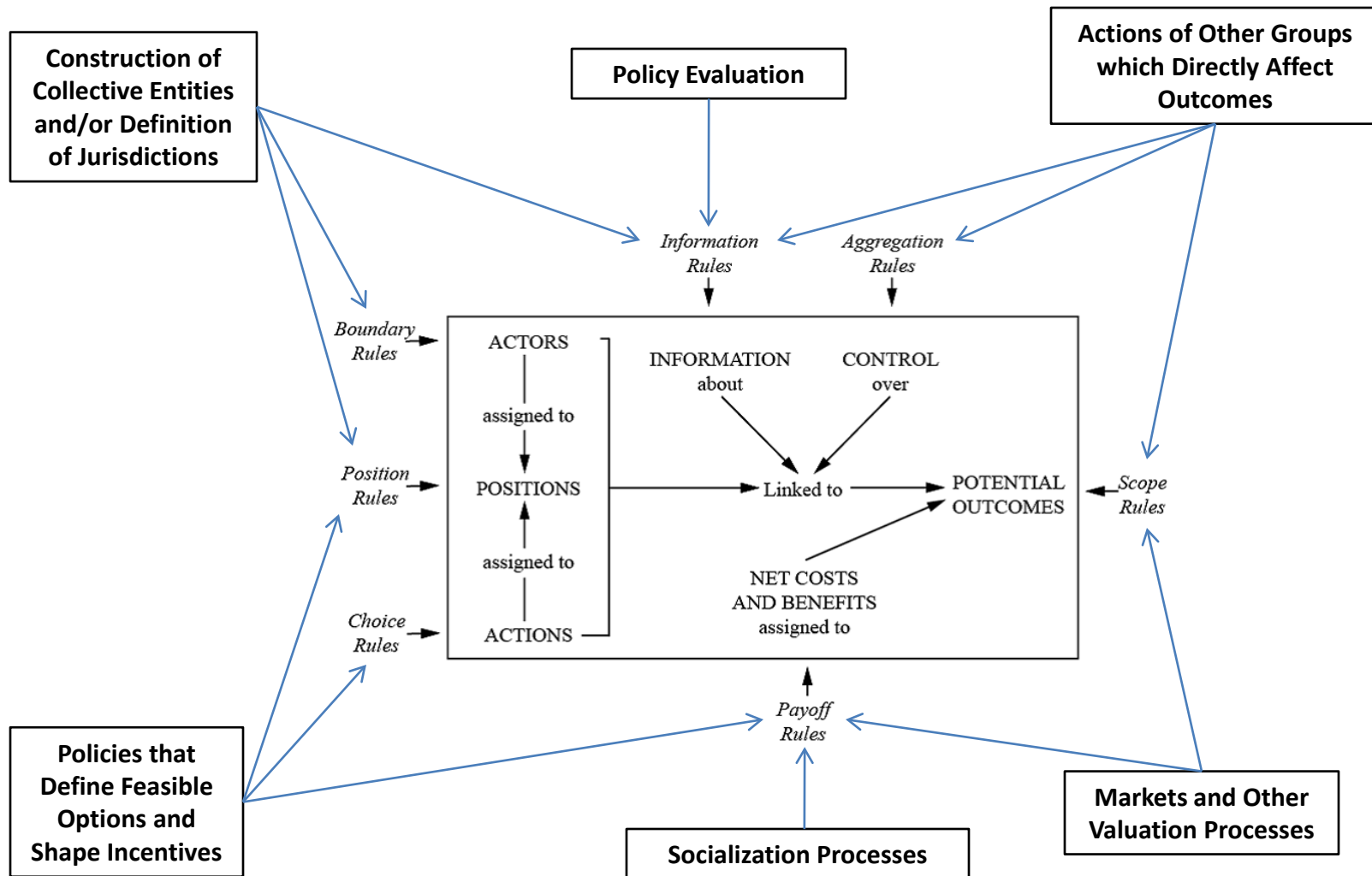
Compositional Rules and Working Components

1. **Boundary rules** specify how participants enter or leave these positions.
2. **Position rules** specify a set of positions, each of which has a unique combination of resources, opportunities, preferences, and responsibilities.
3. **Authority/choice rules** specify which set of actions is assigned to which position.
4. **Aggregation rules** specify the transformation function from actions to intermediate or final outcomes.
5. **Scope rules** specify set of feasible outcomes.
6. **Information rules** specify the information available to each position.
7. **Payoff rules** specify how benefits and costs are required, permitted, or forbidden to players.



1. **Participants/Actors**
2. **Positions**
3. **Actions**
4. **Control** over outcomes
5. **Outcomes**
6. **Information** generated and available to participants
7. **Costs and benefits** assigned to actions and outcomes

Action Situations Adjacent to a Focal Action Situation, with Connections to Working Parts and Associated Rules



Source: Interior figure taken from Ostrom 2005: 189; additional components added by author.

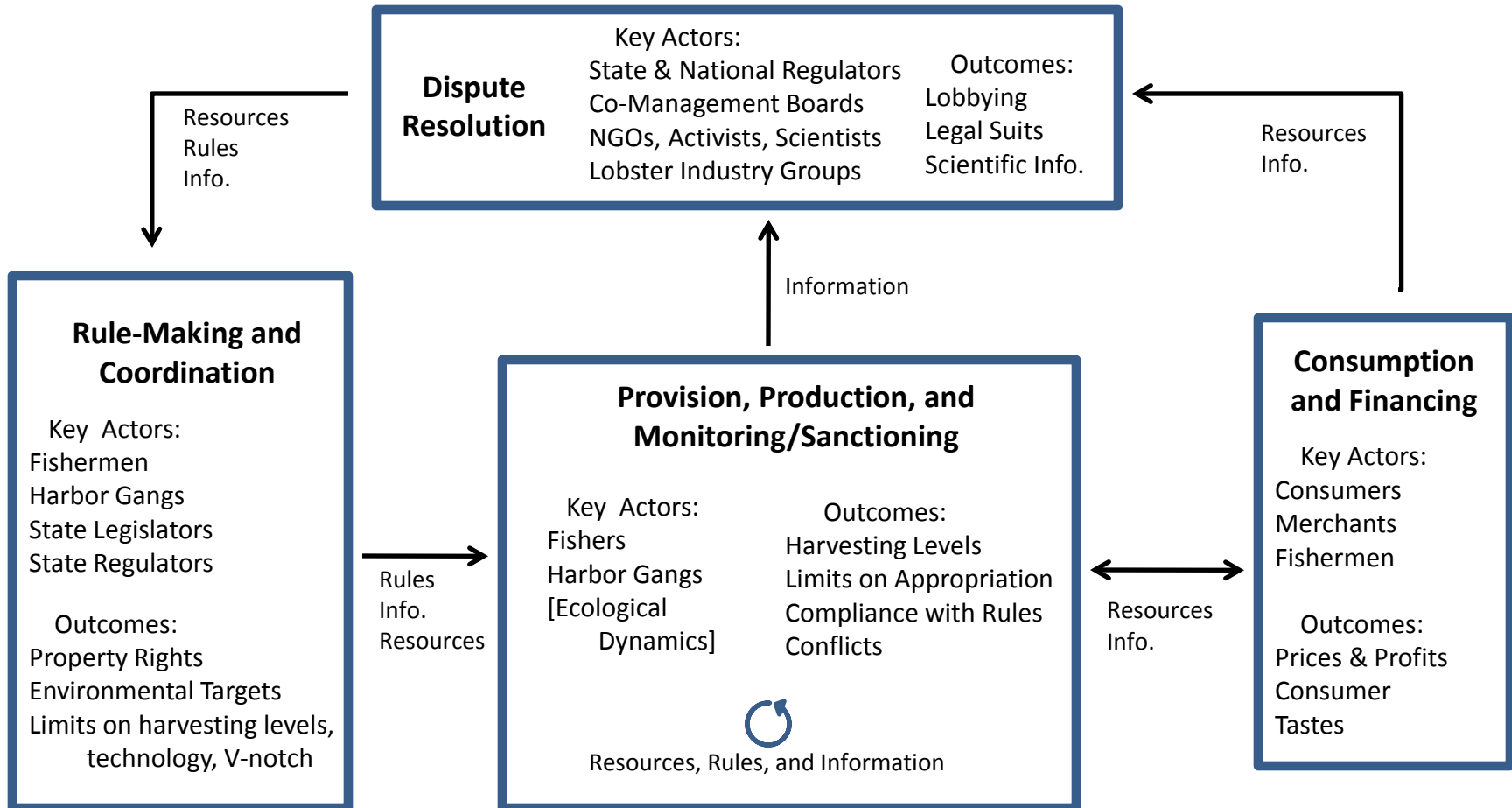
Links via Functions: What Are the Critical Functions of Governance?

1. **Establishment** of collective entities, including collective consumption units (constitutional level)
2. **Selection of and Motivation for Providers**
3. **Provision** (or Procurement): Selection of the bundle of public goods/services for a collective consumption unit
4. **Production**: Physical process of constructing a good or service (steps from appropriation to transformation to distribution)
5. **Financing** (may combine multiple sources)
6. **Rule-Making** (and related collective choices)
7. **Monitoring** (and other information generation)
8. **Sanctioning** (based on information from monitoring)
9. **Dispute Resolution** (including appeals)
10. **Coordination** (and related management tasks)

Table 1. Actor Types and Key Action Situations (Maine Lobster Fisheries)

| Actor Types | Primary Motivations | Consumption | Financing | Production | Provision | Monitoring, Sanctioning | Rule-Making | Co-ordination | Dispute Resolution |
|--|-----------------------------------|-------------------------|--------------------|------------------------|-----------------------------------|--|--------------------|-----------------------|--------------------------------|
| Consumers | Best value, lowest price | Individuals, households | Prices – retail | | | | | | |
| Fishermen | Sustainable livelihood | Important part of diet | Prices – wholesale | Harvesting | | Routine observation, minor sanctions | Rules-in-use | | |
| Harbor Gangs | Protect territory | | | | Informal goals | Regular interactions, impose direct sanctions | Rules-in-use | Local, informal basis | Informal channels |
| Merchants | Profit, reputation | | Profits | | | Can be sanctioned for rule violations | | | |
| State Regulators | Maintain health of state economy | | | | Context of overall state policies | Sporadic monitoring, can start legal proceedings | Formal regulations | Minimal role | Formal procedures |
| Co-Management Boards | Coordination | | | | Sustainable rules | | Formal regulations | Important role | Formal procedures |
| National Regulators | Implement environmental policy | | | | Context of national priorities | Dependent on other sources of information | General guidelines | | Federal courts as final resort |
| Environmental Activists, Scientists | Ecological health, sustainability | | Donations, Grants | | Advocate specific limits | Focus on environmental conditions | | | |
| Ecological Dynamics (non-strategic) | (Growth, reproduction) | | | (Growth, Reproduction) | | | | | |

Figure 2. Network of Adjacent Action Situations in Maine Fisheries



Source: Compiled by author based on material in Acheson 2003.

Key Stakeholders and Organizations in Health Policy

1. Physicians and Other Healthcare Professionals

- a. Primary care professionals
- b. Specialists
- c. Other health professions (nurses, pharmacists, etc.)

2. Facility administrators

- a. Specialized clinics and general-purpose hospitals
- b. For-Profit and Non-Profit
- c. Academic and Community and Government-Owned
- d. Stand-alone or Consolidated Hospital Systems

3. Purchasers (Employers, Government programs, Citizens)

4. Insurers (Private and Public)

5. Other private companies (drugs, medical equipment, R&D, management)

6. Government agencies (facility managers, program administrators, regulators, public health officials, courts)

7. Certification organizations

8. Professional associations

9. Medical schools

10. Health Information Exchanges (HIEs) and other information services

11. Community Service Organizations (CSOs)

12. Consumers/Citizens/Patient Populations

Stakeholder Participation in Critical Healthcare Governance Functions

1. **Establishment:** Government regulators, govnt. program managers, facility administrators, employers
2. **Selection and Socialization:** Medical schools, professional associations
3. **Provision/Procurement:** Govnt. Regulators , Facility Administrators
4. **Production:**
 - a. **Facilities/Physical Capital:** Facility administrators (including govnt.)
 - b. **Professionals/Human Capital:** Medical schools, physicians and other health professionals
 - c. **Information Resources:** all stakeholders
5. **Financing:** Insurance companies, Employers, Govnt. purchasers, citizens, Community Service Organizations
6. **Rule-Making:** Govnt. Regulators, Professional Associations
7. **Monitoring:** Govnt. Regulators, Certification Orgs, Prof. Assoc.,
8. **Sanctioning:** peers, malpractice suits
9. **Dispute Resolution:** courts?
10. **Coordination:** potentially all stakeholders

Links via Processes (or Services)

Dynamic processes within an action situation are triggered by inputs and generate outputs, of three fundamental types:

1. Resources, products, goods, services
2. Economic and other forms of valuation
3. Information on changes in structure & flows

Could represent flows of resources between action situations, perhaps in form of systems dynamics model

Need to identify key actors and services/processes

Note: One colleague insists that rule changes can also be treated as a form of resource flow between action situations.

Direct Services (To Consumer/Patients)

1. **Primary care:** consultation with preferred health care provider (from family physician to nurse practitioner to chiropractor to school nurse, etc.), simple tests, initial diagnosis, referral to specialists, care coordination, etc.
2. **Secondary or specialist care:** tests, surgery, therapy, etc.
3. **Emergency or urgent care:** time-sensitive services
4. **Chronic care:** maintenance in cases of long-lasting medical conditions
5. **Palliative care:** nursing homes, hospice, home health
6. **Preventive care:** promotion of public health, health information, behavior change, healthy communities
7. **Household based co-production:** parents' administering over the counter medications to children and provision of nutritious meals
8. **?? Alternative medicine:** chiropractors, acupuncture, etc.

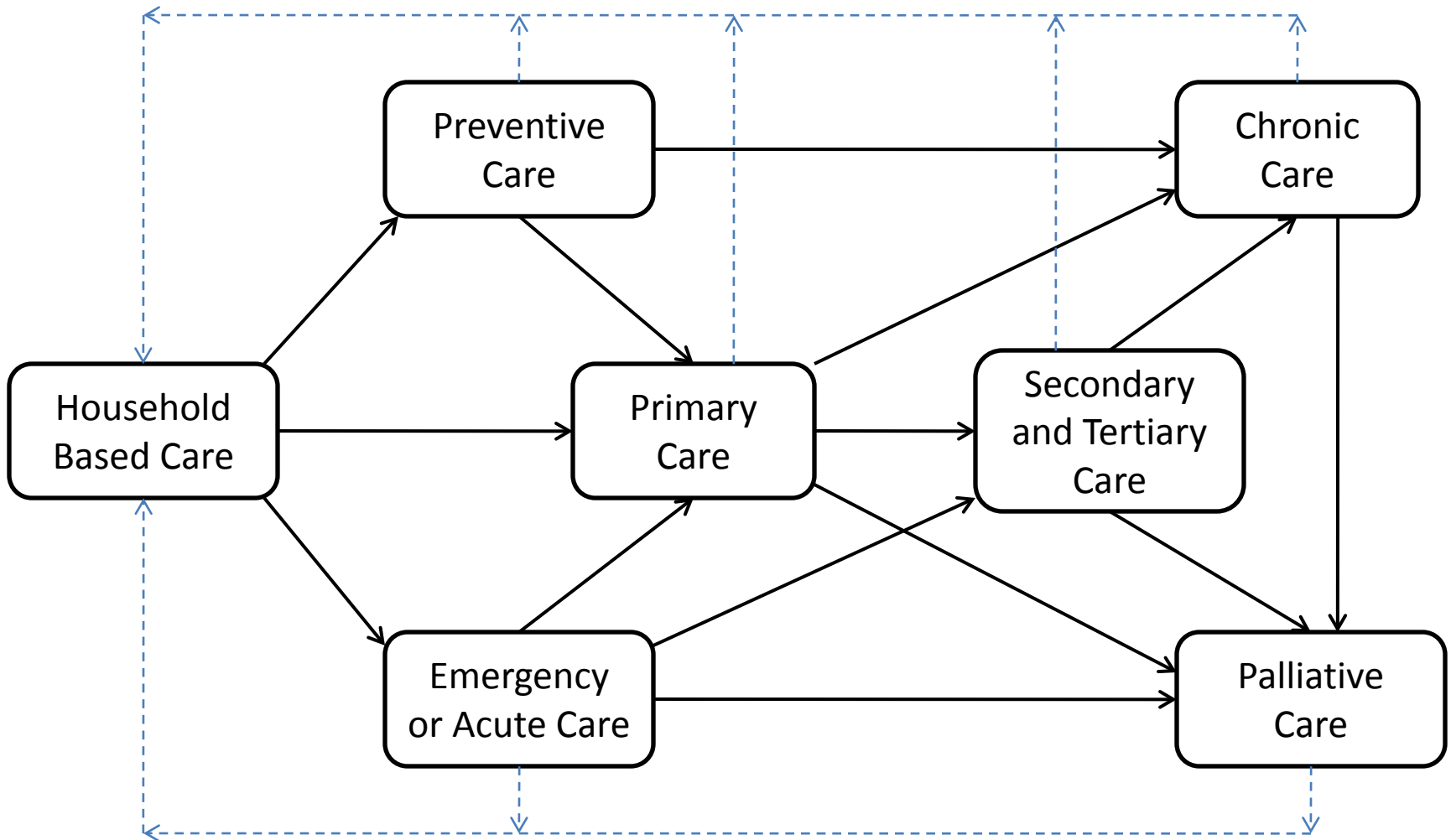
Intermediate Services (To Producer/Providers/Payers)

1. **Testing and lab services:** implementation and interpretation of results
2. **Professional training:** medical, nursing, dental, osteopathic, chiropractic schools as well as training for radiology technicians, nursing assistants, etc).
3. **Facility construction and operations:** hospitals, clinics, emergency facilities, surgical and test centers
4. **Research and development:** drugs, devices, diagnostic technology, quality improvement methodologies
5. **Provision of financing:** Private insurance, Medicare, Medicaid, self-insurance, self-payment, etc.
6. **Support operations:** management services, etc.
7. **Information systems:** health information exchange, electronic medical records, performance monitoring systems, consumer information
8. **Regulation of health care industries:** government agencies, professional organizations, certification agencies
9. **Lobbying and advocacy**
10. **Community level coordination:** burden-sharing agreements, emergency planning

Some further complications

- Each service type (direct and intermediate) can be represented as an **action situation**, with actors, positions, outcomes, etc.
- **Resource pools** of physical, human, financial, and informational capital are generated and maintained by intermediate services
 - Each direct service situation requires all resources in some fashion
 - These resources flow throughout the system, along inter-related paths
- Direct services can be arranged to represent **sequence of decisions or changes in a patient's condition** (and interactions with different health professionals)
 - Do actors in each action situation internalize effects on other action situations, or just optimize current situation?

Sequencing of Direct Services



Note: In each action situation, patients interact with different kinds of healthcare professionals and engage in different kinds of activities.

Key Decision Points

Individual patients

- Buy insurance
- Healthy life-style
- Regular check-ups
- Threshold for seeking help
- Compliance with advice

Primary Care Professionals

- Number/time of patients seen
- Threshold for ordering tests
- Independent or Association
- Oppose new entrants
- Use electronic records

Specialists

- Threshold for intervention
- Set up/join specialized clinic
- Partner with PCPs
- Expand areas of activities

Community Based Organizations

- Set up clinics or focus on advocacy

Hospital administrators

- Legal status: profit, nonprofit
- Ties to training programs
- Independent or consolidated
- Relationship with physicians
- Build new facilities?
- Build specialized clinics or partner
- Participate in gov. programs

Health plans

- Reimbursement options
- Relationship with hospitals, IPAs

Employers

- Offer insurance to employees
- Self-insure or partner with plan

Government Regulators

- Medical legal system
- Tax breaks
- Anti-trust exemptions

Public health officials

- Encourage healthy cmt. dvlpt.

Health Information Exchanges

- Inclusive or club structure

Key Stakeholder Decisions in Different Arenas of Choice

| Stakeholders | Constitutional | Collective (Policy) | Operational (Direct Services) |
|-------------------------|--|--|---|
| Patients | <ul style="list-style-type: none"> •Lifestyle choices | <ul style="list-style-type: none"> •Insurance coverage | <ul style="list-style-type: none"> •Regular checkups •Threshold for seeking help •Compliance with advice |
| Physicians | <ul style="list-style-type: none"> •Join physician's assoc •Attitude to new entrants | <ul style="list-style-type: none"> •Number of patients seen •Fee schedule | <ul style="list-style-type: none"> •Threshold for tests, prescriptions •Use electronic records |
| Facility Administrators | <ul style="list-style-type: none"> •Profit or nonprofit •Consolidation •Physician relationships | <ul style="list-style-type: none"> •Build new facilities •Community outreach •Government programs | <ul style="list-style-type: none"> •Quality control measures •Use electronic records |
| Insurers | <ul style="list-style-type: none"> •Eligibility requirements •Ties to hospitals, IPAs | <ul style="list-style-type: none"> •Cost of premiums •Coverage limits •Reimbursement policies | <ul style="list-style-type: none"> •Timeliness of payments |
| Employers | <ul style="list-style-type: none"> •Offer insurance? •Self-insure or health plan | <ul style="list-style-type: none"> •Portability conditions | <ul style="list-style-type: none"> •NA |
| Government Regulators | <ul style="list-style-type: none"> •Malpractice limits •Anti-trust exemptions | <ul style="list-style-type: none"> •Tax policies •Grants and programs | <ul style="list-style-type: none"> •Extent of monitoring |
| Public Health | <ul style="list-style-type: none"> •Community planning | <ul style="list-style-type: none"> •Disease control policies | <ul style="list-style-type: none"> •Information campaigns |
| HIEs | <ul style="list-style-type: none"> •Inclusive or club | <ul style="list-style-type: none"> •Scope of coverage | <ul style="list-style-type: none"> •Implementation & effectiveness |
| Community Orgs | <ul style="list-style-type: none"> •Build social capital | <ul style="list-style-type: none"> •Advocacy | <ul style="list-style-type: none"> •Scope of services |

Setting the Context for Direct Healthcare Services

