INTEGRATING EVIDENCE FOR SOCIAL MECHANISMS: LESSONS FROM GROWTH DIAGNOSTICS

IASR lecture series 7.11.
Jaakko Kuorikoski NSR
Analytical sociology...

- For explanatory, middle-range theorizing (cf. Merton)
  - Vs. atheoretical “variable-sociology”
  - Vs. atheoretical “interpretive” social science
  - Vs. unempirical “social theory”

- Inspirations: Merton, Schelling, Elster, Analytical Marxism...

- Characteristic methods: agent-based simulation, network analysis, experimentation...

- Most importantly, commitment to...
...and social mechanisms

■ Mechanistic explanation: explaining properties of social system and social outcomes by showing by how they result from the interaction and organization of their parts (usually agents)
■ Inspiration from the mechanistic turn in philosophy of science
■ Mechanism also as evidence for a (macro-level) causal claim
■ "Generative explanation"
  - Background in methodological individualism and rational choice
On mechanisms

- ...are mechanisms for something
  - Identified by the kind of phenomenon or effect they produce
- ...involve irreducibly causal notions
  - A causal process that produces the effect of interest
  - Neither necessarily invisible nor deterministic
- ...have a structure
  - Made up of components organized in particular way
- ...form a hierarchy
  - The properties of the components are realized by yet lower level mechanisms
Mechanisms and the organization of knowledge

- Locus of general social scientific knowledge (i.e., theory)
- The mechanistic toolbox, rather than a general theory
  - E.g., rational choice as a template for building mechanistic models, not a substantial explanatory theory in itself
- Self-fulfilling prophecies, market forms, selection mechanisms, crowding out, diffusion, non-intended segregation, vacancy chains, network effects, “The emperor’s dilemma”...
## A toolbox of mechanisms

### CONTENTION
- Escalation
- Brokerage
- Diffusion
- Coordinated action
- Social appropriation
- Boundary activation
- Certification
- Framing
- Competition for power

### COLLECTIVE ACTION
- Prisoners' dilemma
- Free rider behavior
- Convention
- Norms
- Selective benefits
- Selective coercion
- Conditional altruism
- Reciprocity

### ORGANIZATIONAL ENFORCEMENT
- Audit and accounting
- Supervision
- Employee training
- Morale building
- Leadership

### ECONOMIC ACTIVITY
- Market
- Auction
- Ministry direction
- Contract
- Market for lemons
- Democratic decision making
- Producers' control
- Soft budget constraint

### GOVERNMENT
- Agenda setting
- Cyclical voting
- Log rolling
- Regulatory organizations
- Influence peddling

### STATE REPRESSION
- Secret police files
- Informers
- Spectacular use of force
- Propaganda
- Deception
- Control of communications systems

### NORMS AND VALUES
- Altruistic enforcement
- Person-to-person transmission
- Imitation
- Subliminal transmission
- Erosion
- Charisma
- Stereotype threat

### SOCIAL COMMUNICATIONS
- Interpersonal network
- Broadcast
- Rumor
- Transport networks

### SYSTEM EFFECTS
- Flash trading
- Interlocking mobilization
- Overlapping systems of authority
- Non-linear networks

---

From D. Little Understanding society, 21.7.2014
Evidence for mechanisms

- Evidence is relevant to a theory about that phenomenon, if it constrains the set of possible mechanisms potentially realizing the phenomenon
  - “Top-down” (theory-driven)
  - Presupposes “the toolbox” of simpler mechanisms

- Evidence for mechanisms discriminates between alternative mechanism-hypotheses
  - Mechanistic evidence is contrastive
  - A criterion for evidential relevance
Evidence for mechanisms

- Evidence E is efficient mechanistic evidence for hypothesis H if it strongly favours H1 over a set of plausible alternative (mutually exclusive) mechanistic hypotheses H2...n.
- Importance of “pattern matching” (D. Campbell)
- Reliability of data vs efficiency of evidence
  - How reliably can we infer from a concrete set of data that such and such is the case?
  - What we learn about the possible mechanisms if we know that such and such is the case?
GROWTH DIAGNOSTICS IN DEVELOPMENT ECONOMICS

People in Economics profile: Ricardo Hausmann

“Good economics is driven by an attempt to understand, to own the problem.”

— Ricardo Hausmann, Harvard University
Using evidence for development policy

- Competing approaches to "Macro"-development economics:
  - Cross-country regressions
    - + Empirical
    - - Heterogeneity and the unreliability of the ecological inference
  - Benchmarking
  - Growth (decomposition) accounting
    - + Country specific
    - - Highly theory-laden
    - - Implementation?
  - Growth diagnostics (Hausmann, Rodrik & Velasco 2005; 2008)
Growth Diagnostics
Reasons for low private investment

Low return to economic activity

Low social returns
- bad infrastructure
  - low human capital
- micro risks: property rights, corruption, taxes

Low appropriability
- government failures
  - low human capital
- macro risks: financial, monetary, fiscal instability

High cost of finance
- bad international finance
- bad local finance
- information externalities: “self-discovery”
- coordination externalities
  - low domestic saving
  - poor intermediation
Why diagnostics?

- One size does not fit all!
- Focus on institutions and policy-instruments, not first principles
- Systematic formula for mobilizing many kinds of evidence
  - “emphasizes experimentation”
- Targets only the most binding constraint on growth
  - Wholesale reforms politically unfeasible
  - Avoids possible harmful second-best interactions
Why trees?

- Diagnostic trees
  - "Small-world" decision tools:
    - Sequential cues
    - Noncompensatory
  - Good when time, information and computational constraints
    - Easy to use, fast
    - Can correct for biases in intuitive evidential reasoning
    - Can out-predict regression when n is small
  - Cue-order usually derived from data
    - Machine-learning
Example: Peru

- Hausmann & Klinger 2008
- Long term perspective: recent growth simply a recovery from a drawn-out growth collapse
- Collapse was export led (vs. political crisis, problems in human or physical capital, macroeconomic instability...)
Example: Peru

- Hausmann & Klinger 2008
- No structural response to the external trade shock
Example: Peru

- Peru’s exports are “highly peripheral”, intense in foreign capital, and un-intensive in especially urban labour
Is the social scientist really like a diagnostician?

■ Social pathologies? Functionalism?
■ Not necessarily. Sequential eliminative reasoning
  - Decision tree as a search procedure in a pre-specified space of alternatives
  - Most binding constraint
  - Most important mechanism/cause
■ Theory-driven way of integrating diverse evidence
  - Guides analysis, collection, and production of data
  - Look for the most informative signals (the most severe tests)
  - Contextual, yet informative
Is the social scientist really like a diagnostician?

- Requires strong theory
  - GD decision tree premised on the validity of a general (neo-classical HRV) growth theory
  - The decision tree as a heuristic, not a true decision tool
- In principle, each mechanism-schema implies its own “decision tree”
- General lessons from diagnostic thinking:
  - Look for phenomena that efficiently discriminate between alternative hypotheses
  - Look for (or produce) data that provides the strongest signal (severest test) for the existence of that phenomenon
  - Iterate...