

What Do Managers Do? Old and New Theory and Evidence on Managerial Practices and Productivity

B. Gibbons
MIT and NBER

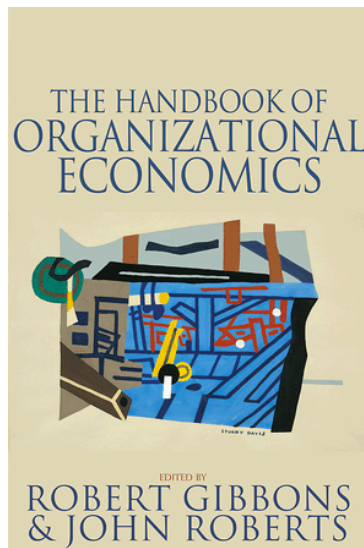
2nd CEPR IMO Workshop
September, 2013

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What Do Managers Do?

Exploring Persistent Performance Differences
among Seemingly Similar Enterprises

Robert Gibbons and Rebecca Henderson



Cyert and March (1963) at Fifty: A Perspective from OE

B. Gibbons
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Stanford
April 12, 2013

○ Audience (1)

Heard: Ben, Florian, Imran, Maitreesh,
Michael, Ray, Steve, ...

Give: Andrea, Chris, Guido, John, Luis,
Marina, Mike, Nick, Oriana,
Raffaella, Rocco, Tim, ...

○ Audience (2)

- Interested in orgs!
- New to me ☺
- 2013 = 1963 + 50

○ Rescheduling

- Thank you & apologies
- Dr. Elizabeth A. Martinez (1966-2013)
- Culture & bloodstream infections in ICUs



Cyert and March (1963) →
Management →
Culture & BSIs →
Current & Prospective Theory

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Metaphors for Organizations?

Strategic Design

Organizations are machines

An organization is a mechanical system crafted to achieve a defined goal. Parts must fit well together and match the demands of the environment.

Action comes through planning.

Political

Organizations are contests

An organization is a social system encompassing diverse, and sometimes contradictory, interests and goals. Competition for resources is expected.

Action comes through power.

Cultural

Organizations are institutions

An organization is a symbolic system of meanings, artifacts, values, and routines. Informal norms and traditions exert a strong influence on behavior.

Action comes through habit.

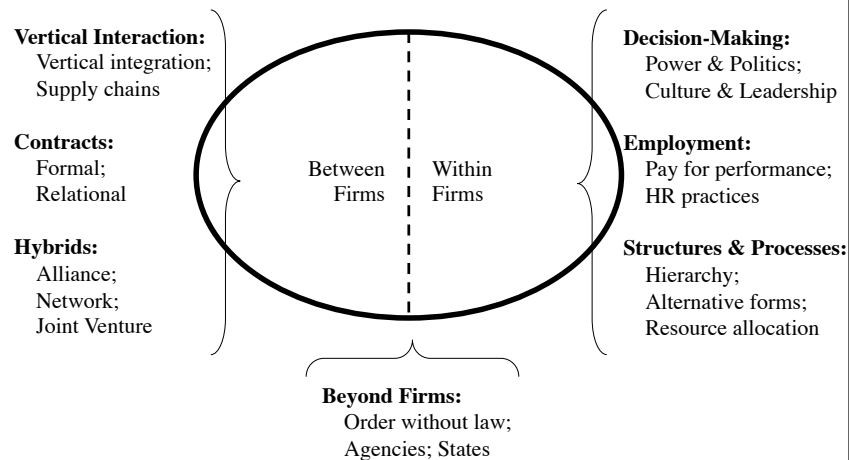
- Interests are everywhere, but explicit pay-for-performance is not (and shouldn't be)
- In many orgs, “rules routinely violated”
 - Kate Kellogg (*AJS*): 80-hour week for surgery residents @ 2 hospitals
- Management matters, and measured mgmt practices are proxying for truths, but some of these truths hard to copy
- Innovative experimental treatments can have important effects, but can we devise treatments to “change culture”
- ...

Cyert and March (1963) at Fifty: A Perspective from OE

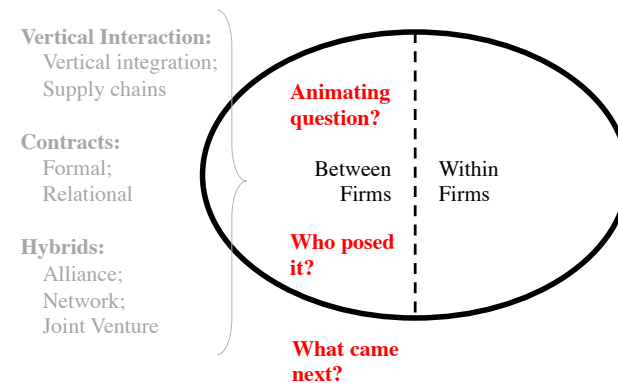
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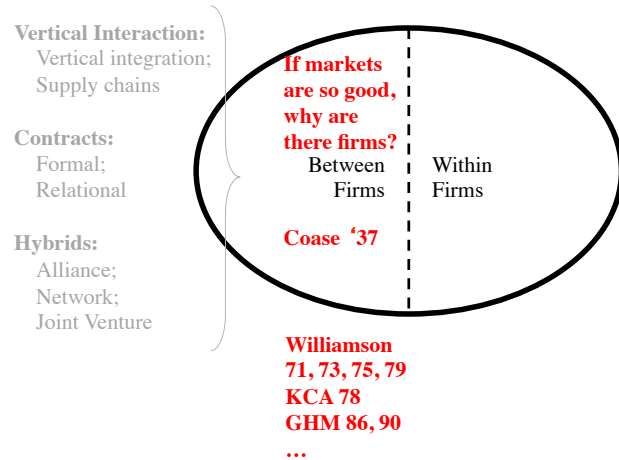
OE' s Footprint?



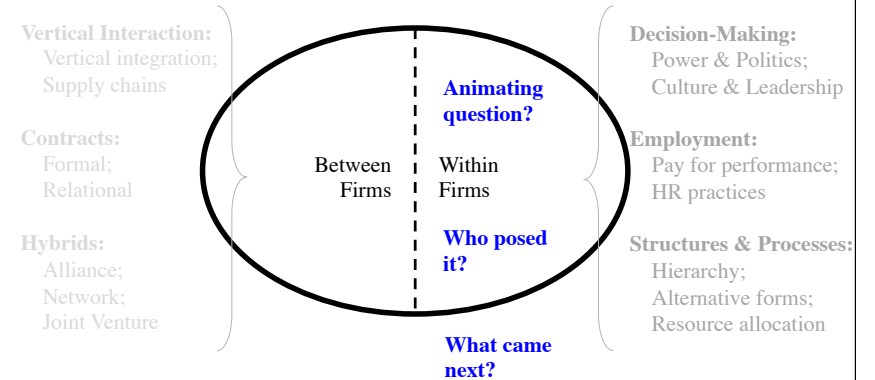
OE' s Wellsprings?



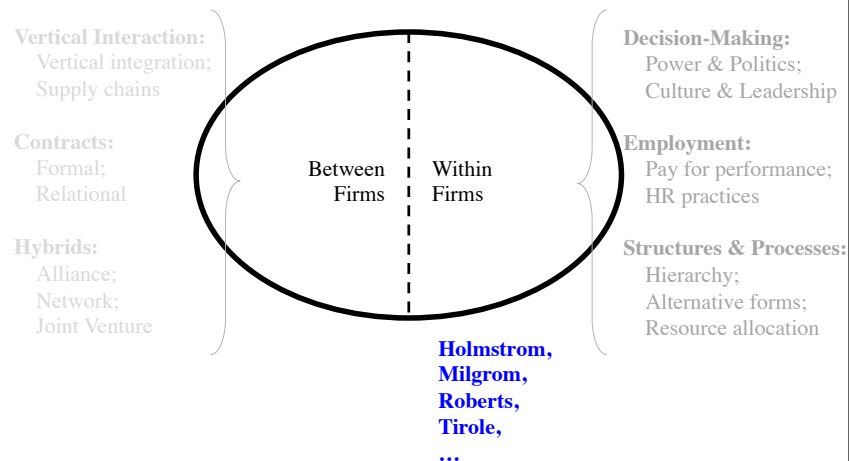
OE' s Wellsprings?



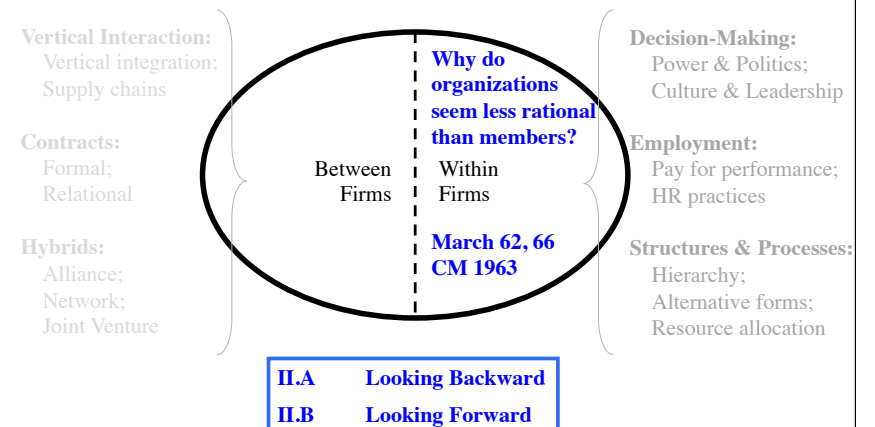
OE' s Wellsprings?



OE' s Wellsprings?



OE' s Wellsprings?



II.A Looking Backward (at what CM 63 said that OE now takes for granted)

People (*i.e.*, individuals) have goals; collectivities of people do not.

... the existence of unresolved conflict is a conspicuous feature of organizations ...

Cyert & March, 1963

“The Business Firm as a Political Coalition”

(March, 1962)

[To describe a “conflict system”] as ‘acting’, ‘behaving’, ‘choosing’, or ‘deciding’, we are required to introduce *some mode of conflict resolution*.

Extant theories take one of two directions: ... they impute a superordinate goal ..., or they describe *a process by which decisions are reached*.

[In a firm,] the executive ... is a political broker ... [who cannot] solve the problem of conflict by simple payments to participants and agreement on a superordinate goal.

Where different parts of the organization have responsibility for different pieces of information relevant to a decision, we would expect some bias in information transmitted due to ... some attempts to manipulate information as a device for manipulating the decision. **[But] we cannot reasonably introduce the concept of communication bias without introducing its obvious corollary – “interpretive adjustment.”**

Spence 73

Crawford-Sobel 82

Holmstrom 84

Tirole 86

Milgrom-Roberts 88

Cyert & March, 1963

II.B Looking Forward (at what CM 63 said that OE probably should explore)

1. Behavioral OE (Part I)
2. Coalitions & Side Payments
3. What Do Managers Do?
4. Coase Meets Cyert & March
5. *A Theory of Firm Behavior*

II.B.2 Coalitions & Side Payments

- Cyert & March
 - “a basic problem in developing a theory of coalition formation is that of handling side payments”
 - “many forms: money, personal treatment, authority, organizational policy”
 - “Side payments, far from being the incidental distribution of a fixed, transferable booty, represent the central process of *goal specification*. That is, a significant number of these payments are in the form of *policy commitments*.” (italics added)
- Commitment = promise, not contract
- Promise = policy, not payment
- March '66 vs. Shapley '53 Non-contractibles in orgs!

II.B.3 What Do Managers Do?

- Recent empirical work in OE!
- Theory inspired by Cyert & March?
 - We have argued that the business firm is basically a coalition without a generally shared, consistent set of goals. Consequently, *we cannot assume that a rational manager can treat the organization as a simple instrument in his dealings with the external world*. Just as he needs to predict and attempt to manipulate the “external” environment, *he must predict and attempt to manipulate his own firm*. Indeed, our impression is that *most actual managers devote much more time and energy to the problems of managing their coalition than they do to the problems of dealing with the outside world*.
- Barnard '38, Penrose '59, Arrow '74, ...
 - Mintzberg (*Managers, Not MBAs* '04): analysis vs. *administration*

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What Do Managers Do?

Exploring Persistent Performance Differences
among Seemingly Similar Enterprises

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Outline of Chapter

- 3 1. There exist *persistent performance difference* (PPDs) among seemingly similar enterprises. Syverson *JEL* 11 + Sec. 2
- 1 2. Understanding PPDs matters for business strategy, government policy, and economic research.
- 6 3. Proxies for *management practices* are correlated with these performance differences. BVR *QJE* 07 + Sec. 3
- 8 4. Many of these management practices rely on *relational contracts*. Gibbons-Henderson *Org Sci* 12 + Sec. 4
- 13 5. Economic models of *building and changing* relational contracts have arrived. Sec. 5
- 14 6. Building and changing relational contracts remains *more difficult* than most theory has described. Sec. 6

4. Management Practices & Relational Contracts

- Barnard (1938), Simon (1947), Penrose (1959), Cyert and March (1963), Arrow (1974). ...
- *Equilibria* of repeated games (with transfers)
- *Shared understandings* of the parties' roles in and rewards from collaboration ...
- Part of the *culture* of a relationship?
- Part of the *norms* of a relationship??

Gibbons-Henderson *Org Sci* 2012

Example 1: Bonus @Lincoln Electric

(Fast & Berg 75)

- Arc welders and supplies in Cleveland (*Fortune* 200)
- Pay = piece rate + *bonus*
 - supervisor assesses ideas, cooperation, dependability
 - bonus *about* half of typical worker's pay
 - bonus pool *about* half of pre-tax, pre-bonus earnings
- Complementary relational contracts
 - Change piece rate; employment security
- (Re)defining relational contract, even after decades

Example 2: Decentralization @ J&J

(Aguilar & Bhambri '83)

- “Decentralization = Creativity = Productivity”
 - **J&J**: 140 (220) local operating companies
 - Exec. Com. = 11 (but Tylenol w/ codeine)
 - π -center, autonomy, retained earnings
- Hospital Services Group “3 years late”
 - Revising promises w/ LOCs?
 - New promises @ HSG?
 - Service group? Cost center? Staffing?

Example 3: “ProPub” @ Merck

(Henderson & Cockburn *SMJ* 94)

- bio-tech revolution \Rightarrow science-based discovery
 - hire PhDs, build labs, attend confs, do research, *publish papers!*
 - “ProPub” \rightarrow patents (e.g., @ Merck)
- Imagine recruiting first rookie @ Merck:
 - better lab, less teaching, better pay
 - *almost* like asst. prof.
 - but clearly not identical
 - e.g., Nobel in 3rd year with no drugs

Summary of Part 4

- Many important management practices seem relational
- Many important relational contracts seem hard to explain ex ante and hard to change ex post
- Explanation for slow diffusion?

Existing Views of Slow Diffusion

(~ J. Rivkin)

- Perception:
 - We don't know we're behind.
- Inspiration:
 - We know we're behind, but we don't know what to do.
- Motivation:
 - We know what to do, but we don't want to do it.
- **Implementation:**
 - We're trying but can't get the organization to do it.

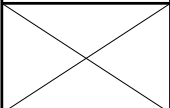

Henderson-Clark 90
Christensen 97

Winter 88, 06
Gant et. al. 02

Reinganum 89
Bloom-Van Reenen 07

Milgrom-Roberts 90, 95
Levinthal 97, Rivkin 00

IO & OE Theories of the 4 'tions

	<u>IO</u> (N = 1)	<u>OE</u> (N > 1)
Perception	Differing Priors?	Group Think?
Inspiration	Bandit?	Silos?
Motivation	NPV?	Human Capital?
Implementation		

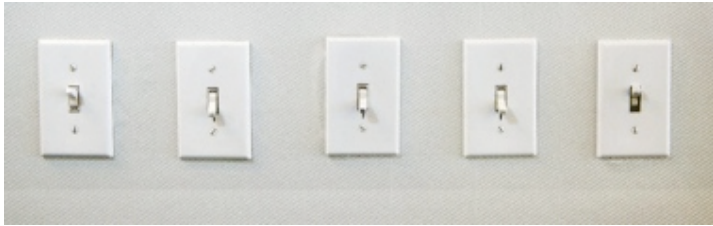
Our Central Case:
Practice does not fully diffuse even though clearly helpful, widely understood, and trying hard to implement

Perception, Motivation?



- Management practice *could* be light switch:
 - Easy to describe
 - Straightforward to implement

Inspiration?



- Management practices *could* be light switches:
 - Each one easy to describe & simple to implement
 - But complicated interactions (bumpy landscape)

Culture & Bloodstream Infections: Is Hand-Washing a Light Switch?



The NEW ENGLAND
JOURNAL of MEDICINE

An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU

Peter Pronovost, M.D., Ph.D., Dale Needham, M.D., Ph.D., Sean Berenholtz, M.D., David Sinopoli, M.P.H., M.B.A., Haitao Chu, M.D., Ph.D., Sara Cosgrove, M.D., Bryan Sexton, Ph.D., Robert Hyzy, M.D., Robert Welsh, M.D., Gary Roth, M.D., Joseph Bander, M.D., John Kepros, M.D., and Christine Goeschel, R.N., M.P.A.

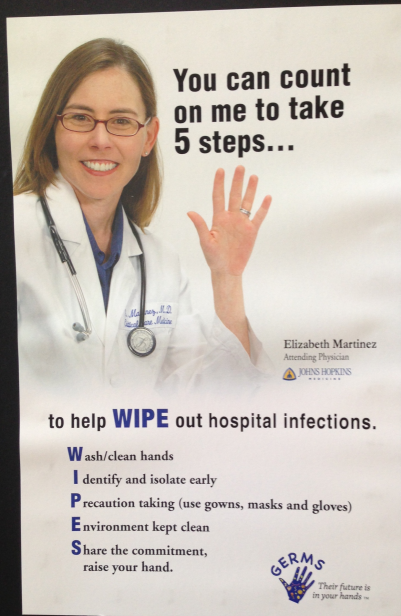
N Engl J Med 2006; 355:2725-2732 | December 28, 2006 | DOI: 10.1056/NEJMoa061115

- *Observation*: checklist extremely simple

The study intervention targeted clinicians' use of five evidence-based procedures recommended by the CDC and identified as having the greatest effect on the rate of catheter-related bloodstream infection and the lowest barriers to implementation.¹ The recommended procedures are hand washing, using full-barrier precautions during the insertion of central venous catheters, cleaning the skin with chlorhexidine, avoiding the femoral site if possible, and removing unnecessary catheters.

- *Fact*: two-fold intervention (checklist + culture)
- *Possibility*: need both (but culture not a light switch)

“Safety Attitudes” and Bloodstream Infections (in ICUs in Michigan)



“Culture” in MNEs? (BSVR *QJE* 12)

Dependent variable: Decentralization	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Additional controls:	None - Baseline	Management Quality	Individual Pay incentives	Family ownership	Hierarchical Religion	Competition	All
Trust	0.596*** (0.219)	0.565** (0.223)	0.606*** (0.217)	0.580*** (0.217)	0.694*** (0.182)	0.585*** (0.217)	0.618*** (0.175)
Trust in CHQ region/country of location							
Management		0.179*** (0.041)					0.139*** (0.038)
Bonus			0.377** (0.171)				0.419*** (0.119)
Family management				-0.091 (0.063)			0.034 (0.045)
Hierarchical religion					-0.004*** (0.002)		-0.004** (0.002)
Competition						0.150*** (0.043)	0.068** (0.027)
Observations	3,655	3,655	3,655	3,655	3,655	3,655	3,655
Country of CHQ location controls (2)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of plant location dummies (11)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region of plant location controls (2)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies (148)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other controls (57)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location	CHQ location
Number of clusters	146	146	146	146	146	146	146

Notes: * significant at 10%, ** significant at 5%, *** significant at 1%. Dependent variable is the decentralization z-score index, measured by plant manager's autonomy over hiring, investment, products, and marketing. Estimation by OLS with robust standard errors in parentheses. Standard errors clustered by the firm's headquarter region of location (country of origin if the plant belongs to a foreign multinational). TRUST measures the percentage of individuals who agreed with the statement "most people can be trusted" in the firm's headquarter region of location (country of origin if the plant belongs to a foreign multinational). MANAGEMENT is the firm-level Bloom and Van Reenen (2007) management score. BONUS is the percentage of managerial compensation tied to individual, team, and firm performance. FAMILY MANAGEMENT is a dummy equal to one if the firm is owned and run by family members. HIERARCHICAL RELIGION is the percentage of people belonging to a hierarchical religion in the region of plant location as recorded by the WVS (see text). COMPETITION is a variable measuring the number of the firm's direct competitors, as perceived by the plant manager (0=no competitors, 1=between 1 and 5 competitors, 3=more than 5 competitors). "Country of CHQ location controls" is the log of GDP per capita and population in the country of CHQ location. "Region of plant location" controls are the log of GDP per capita and population in the region where the plant is located. "Industry dummies" are 3 digits SIC dummies. "Other

Effect of *Culture* in Nigerian CS?

	(2) Autonomy Components
Facilities	0.08** (0.03)
Skills	0.11** (0.04)
Staffing	0.11* (0.06)
Targeting	0.04 (0.04)
Flexibility	0.18*** (0.04)
Roles	0.32*** (0.05)
Culture	0.00 (0.03)

Relational Contracts in Nigerian CS?

Flexibility

Does your organization make efforts to redefine its standard procedures in response to the specific needs and peculiarities of a community?

How flexible would you say your organization is in terms of responding to new practices, new techniques, and regulations?

At your organization, how efficiently is best practice shared between departments?

Given past experience, how effectively would a conflict within your organization be dealt with?

Roles

Can most staff above SGL 7 in your organization make substantive contributions to the policy formulation and implementation process?

Can most staff above SGL 15 in your organization make substantive contributions to the policy formulation and implementation process?

To what extent do the employees in this organization have the ability to determine how they carry out the assignments in their daily work?

Culture

How effectively would you say your organization is in making the bulk of its staff feel valued?

To what extent would you say employees of your organization trust each other?

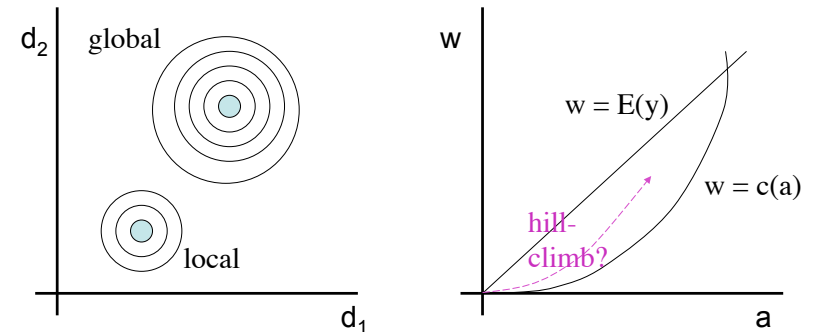
If you think about the way that employees of this organization respond to a standard work challenge, would you say that there is a set of 'shared values' amongst all the staff?

Out of every ten [10] officers above SGL 7, how many people from this organization participate in groups, committees and activities with other people from this organization outside of the formal structure of government (for example, in community or social organizations)?

Effect of *Rel Cons* in Nigerian CS?

	(2) Autonomy Components
Facilities	0.08** (0.03)
Skills	0.11** (0.04)
Staffing	0.11* (0.06)
Targeting	0.04 (0.04)
Flexibility	0.18*** (0.04)
Roles	0.32*** (0.05)
Culture	0.00 (0.03)

Inspiration vs. Implementation?



Bumpy Landscape

Milgrom-Roberts 90, 95
Kaufman 93
Levinthal 97, Rivkin 00

Ridge Line

$$\pi = y - w$$

$$U = w - c(a)$$

Cyert and March (1963) →
Management →
Culture & BSIs →
Current & Prospective Theory

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5. Are Relational Contracts Part of the Implementation Problem?

- A. Unobserved Heterogeneity
- B. Consummate Collaboration Hard to Build & Sustain
- C. (Re-)Building an Equilibrium??

5C. (Re-)Building an Equilibrium??

What can an economist do to help a fixed set of people be more productive together?

Equilibrium theory of equilibrium selection?

Liebenstein: “Wonder if they’ve *discovered* how to play cooperate-cooperate, while the others are *stuck* in defect-defect?”

5A. Unobserved heterogeneity (ie, only seemingly similar)

- Discounting
 - Board *AER* 12
- Competition
 - Board & Meyer-ter-Vehn *WP* 11
 - **Powell *WP* 12**
- Network
 - Fainmesser *AEJμ* 12
 - Jackson, Rodriguez-Barraquer, Tan *AER* 12
- Types
 - MacLeod-Malcomson *JPE* 88
 - Watson *JET* 99, *GEB* 02
 - **Halac *AER* 12**

Fabulous, but:
Bad performance from
bad parameters;
Not fixed people (and
nothing to be done?)

5B. Consummate Cooperation Can Be Hard to Build & Sustain

- PPDs among Ex Ante Identical Enterprises
 - Chassang *AER* 10
- Long-run Distortions from Short-run Shocks
 - Li & Matouschek *forth. AER*
- Cooperation Hard to Sustain, Even Once Built
 - *Public state*: McAdams *AEJμ* 11
 - *Global games*: Chassang *Ecta* 10, Chassang & Padro i Miquel *QJE* 10
 - *Private monitoring*: Levin *AER* 03, MacLeod *AER* 03, Fuchs *AER* 07, Maestri *AEJμ* 12

Fabulous, but:
Bad performance from
bad luck;
Nothing to be done?

- Chassang *AER* 10
 - “equilibrium theory of equilibrium selection”
- Venables *WP* 13
 - “devote time and energy to managing internal coalition”
- Andrews-Barron *WP* 13
 - “side payments through policy commitments”