

Politics, Bureaucracy and the Firm: Principal-Agent Dynamics

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Global Challenges: Prosperity

LUC ~ 2 Mar 2015

Some motivation

<https://www.youtube.com/watch?v=i9pZ0zIHyPQ>

Some motivation too

Let's play "telephone" ("Chinese whispers")

Overview

We need to blend in some old stuff to put context on the new stuff. . .

- ▶ Asymmetric information
- ▶ Collective action and public goods games
- ▶ “Types” of people
- ▶ Markets, groups, firms, and principal-agents
- ▶ Coase’s theory of the firm
- ▶ Principal-agent dynamics
- ▶ “Save the poor, shoot some bankers” plus “Mind the Gap”

Asymmetric information

In these two examples, we saw

Adverse selection: Unobserved “type” (Golden Balls partner)

Moral hazard: Unobserved “action” (When the phrase changed)

NB: Insurance companies invented these terms to understand risk

Adverse selection, i.e., high risk people buying insurance while low risk clients do not; and

Moral hazard, i.e., policy holders who take greater (unobserved) risks because they are protected from loss.

This is why young men (AS) with speeding tickets (MH) pay more for car insurance than old ladies with decades of safe driving.

Other examples: Banking (too big to fail), homeowners (subsidized flood insurance), farmers (“emergency aid”), etc.

Flashback: Collective action

Groups have problems with collective goods when they cannot know types or actions.

We can use observed behavior to classify people as the following types:

Cooperator: Contributes to the group, unconditionally

Defector: “Free rides” on the group, unconditionally

Reciprocator: Decides what to do, based on others’ actions

Let’s look at these types using an example...

Public goods game example

1. Four players, each with 50 tokens, are in a group
2. Each splits tokens between collective (public) good and private account
3. Everyone benefits from collective good, no matter (their) contribution
4. Payoff depends on collective good plus private tokens
5. Example: Contributions of 0, 20, 20 and 50 results in payoff of $(90 * 2/4 =)45$ to each, e.g., fire protection
6. Mr 0 gets $45 + 50 = 95$; Mssrs 20 get $30 + 45 = 75$, and Mr 50 gets $0 + 45 = 45$

Mr 50 is not pleased. Contributions deteriorate in repeated games *without means of exit or punishment*

So are we helpless? No...

Collapse isn't inevitable. . .

Results in PGG games — in the lab and real life — can be improved.

Your ideas?

More ideas

- ▶ Move from anonymous to known [my section]
- ▶ Grouped free riders change type
- ▶ Repeated games change incentives
- ▶ Punishment very effective

What underlies type?

Why do we do what we do with our discretion...

Intrinsic motivation affects our behavior “from inside”

Extrinsic motivation affects our behavior “from outside”

Examples: Why don't we litter? Why don't we take people's things? Why do we work long hours? Why don't we rape?

Both motivations matter, i.e., boss hires a “good worker” but pays *and* praises/criticizes her.

Let's get a little more exact on these ideas

Modeling behavior

Intrinsic motivation is similar to guilt or “other-regarding preferences,” i.e.,

Selfish: $U_i = f(x_i)$ [*homo economicus*]

Guilty: $U_i = f(x_i)$, subject to $x_i \leq \bar{x}$

Other-regarding: $U_i = f(x_i, x_k)$

What about extrinsic motivators like punishment and rewards?

$U_i = f(x_i, -p)$, where probability of p (unishment) increases in x_i .

$U_i = f(x_i, e, r)$, where probability of r (eward) increases in e (ffort).

These influences – personal, social, official – interact.

Context: markets, groups, firms, and principal-agent

Markets: “Atomistic” transactions. Surplus depends on market power and externalities

Groups: Collective (peer-to-peer) production, consumption and discipline

Firms: Hierarchical and peer relations inside; transactions outside

Principal-agent: Like firms with faster turn-over

Recap: asymmetric information in markets and groups

Markets produce surplus in proportion to differences in skills, resources and tastes. Prices, competition and numerous transactions weaken the importance of additional information.

In **groups** producing and consuming collective goods, the need to know who is contributing to production and discipline (of non-contributors) is more important than in markets because people are “stuck” with each other. Free riders weaken groups – often fatally.

The need to know is even more important in firms and principal-agent relations. . .

Coase's Nature of the Firm

What were his big questions?

Your ideas?

Hopefully, you said something like this. . .

- ▶ Why are there firms?
- ▶ Where is the line between the firm and the market?
- ▶ How do we decide to outsource vs produce in house?
- ▶ Do we need to rely on the discretion of the entrepreneur or can we coordinate with prices?

The answers to these questions depend on transaction costs. . .

Transaction costs

In-house: When there are high TCs in the market, i.e., monitoring discretionary behavior with incomplete contracts. Examples: design, HR, finance, sales

Out-source: When TCs are low in the market, i.e., competitive market for standard products/services. Examples: payroll, janitorial, food

Either: Depends on the industry and firm's goals. Examples: customer service, manufacturing, delivery

Firms vs groups (over-simplified)

- ▶ A firm is *like* a collective group in terms of relations among participants and joint production of a good
- ▶ A firm is *not like* a collective group in terms of hierarchy and membership. A boss can hire and fire; most collective groups are made of peers who are “stuck with each other,” e.g., members of a community
- ▶ Firms usually produce (excludable) private or club goods, e.g., phones for sale or membership of a phone network. Possession comes from payment; free-riding is easy to detect and punish
- ▶ Groups usually produce non-excludable common-pool or public goods, e.g., collective bargaining or radio broadcasts. Possession is open to all, making free riding in use a problem. Free riding in production can also be a problem, if effort is difficult to observe

... and now we're ready for principal-agent problems. . .

What is a principal-agent relationship?

A combination of transaction and relationship in which the *principal* trusts the *agent* to carry out a task on their behalf, usually because the agent is *capable* of doing a better job.

In the best of circumstances, both are better off, i.e., trading money for expertise.

Your examples?

- ▶ Parents hire teachers for their children
- ▶ Car owners hire a mechanic to fix their car
- ▶ Home buyers hire an estate agent to find a deal

The best agents have some form of other-regarding preferences, i.e., $U_i = f(x_i, x_k)$

PA dynamics

In the worst case, the principal is worse off, i.e., wasting money on poor results.

Examples of problems with adverse selection *or* moral hazard:

- ▶ Teachers impose own ideas *or* take long breaks
- ▶ Mechanic doesn't know Japanese cars *or* makes unnecessary repairs
- ▶ Estate agent doesn't know market *or* recommends overpriced “dog” of a house

What about politicians? Do we always choose the qualified one? Does the one we choose always work hard for us? **Your thoughts?**

One more time: AS and MH

Adverse Selection: Principal harmed by picking unqualified agent
(i.e., agent's ability)

Moral Hazard: Principal harmed by agent's defecting action (i.e.,
agent's choice)

In both cases, the principal suffers from asymmetric information.

Let's look at an example from my paper...

Save the poor, shoot some bankers

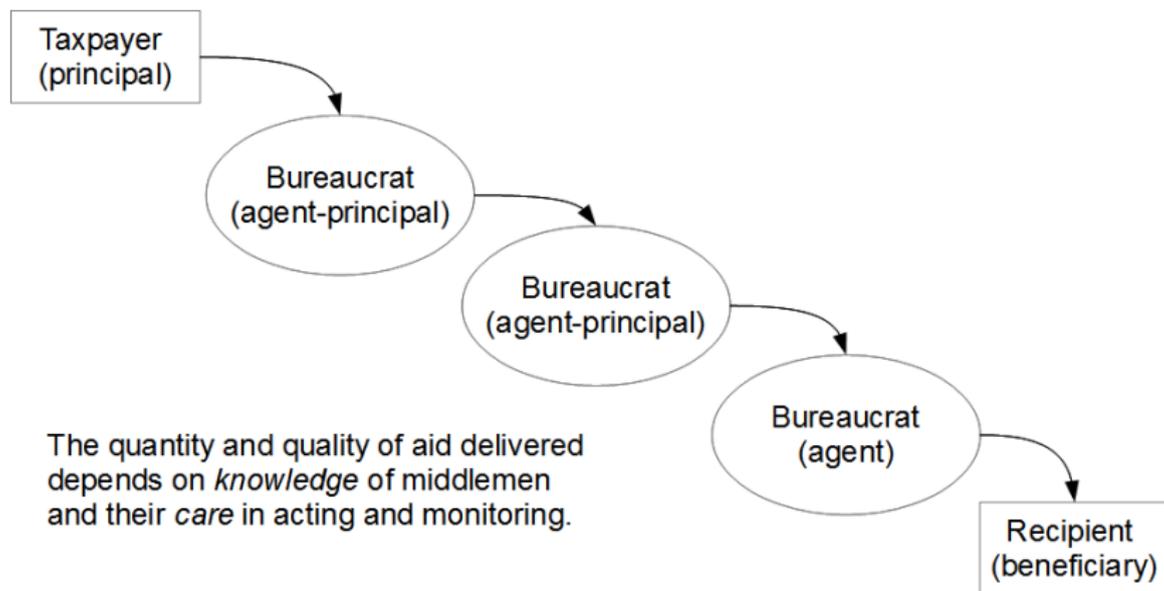
In that paper on international aid bureaucracy, I break AS into *knowledge* and *care* to explain observed facts:

Knowledge	High care	Low care
High	Experienced aid worker	Corrupt local official
Low	Enthusiastic volunteer	Bureaucrat on a junket

Effort is impossible to observe, but “good agents” do not need to be observed.

And how does the aid-daisy-chain work?

Performance is hard to measure or improve due to gap between beneficiary and principal (information, commitment) as well as numerous agents (also functioning at principals) on the way.



How to address PA problems?

What are your ideas?

Adverse Selection: Get recommendations, hire “certified” or experienced people, do a small deal first

Moral Hazard: Monitor actions, profit- (or loss-) sharing, reduce discretion (e.g., fixed input-output ratios)

Both Compare results across agents or among competing chains of agents (benchmarking), empower recipients to discipline agents (as principals)

NB: Higher salaries can attract talent, but also money seekers.

Try lower payments with stronger intrinsic incentives, e.g., “be all you can be,” “the toughest job you’ll ever love,” etc.

For Wednesday: Landlords and tenants in NL

Situation: Landlord pays for appliances and insulation. Tenant pays for energy use.

The concern here is action by the landlord or tenant, i.e., moral hazard.

MH non-issue: Owner pays for energy (Case 1)

MH 1: Landlord (agent) installs less efficient equipment or less insulation b/c tenant pays bills (Case 2)

MH 2: Tenant (agent) doesn't pay attention to energy use b/c landlord (principal) pays bills (Case 4)

And what's observed?

Reading: Landlords and tenants in NL

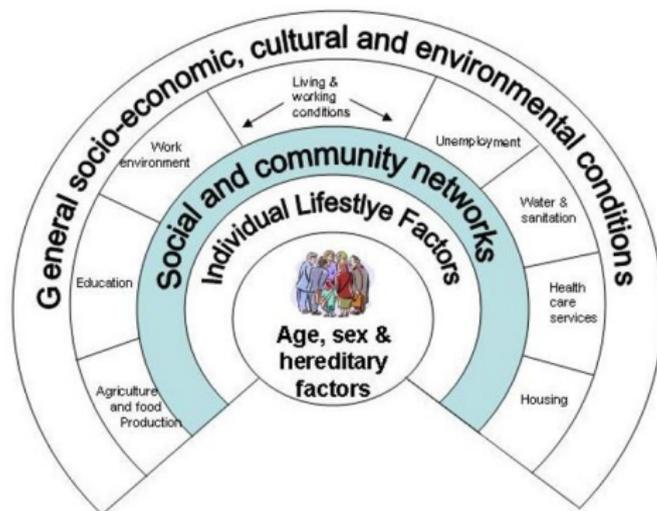
Measure	Total	Privately owned	Social rental	Private rental
Roof insulation	64%	70%	59%	40%
Wall insulation	50%	52%	55%	29%
Floor insulation	35%	39%	30%	21%
Insulated glazing	66%	70%	67%	48%
Boiler (improved yield)	49%	43%	60%	54%
Condensing boiler (high yield)	38%	47%	26%	25%

Bottom Line: Authors estimate two percent of Dutch energy wasted due to P-A problems.

Read the paper for seminars!

Almost done: Next week

Social determinants of public health *The social ecological model*



But wait! One more YouTube example...

Asymmetric information III

`https://www.youtube.com/watch?v=6_BhAuVBWFg&feature=youtu.be&t=2m1s`