

# **Institutions and Cooperative Behavior**

by

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# Introduction

- Institutions bring order to a complex external world (Wittgenstein: The limits of my language means the limits to my world). Still multiple representations
- Institutions also create complexity
- Social complexity
  - Different representations – e.g., different forms of knowledge/epistemic communities
  - Different motivation structures – e.g., individual vs. social rationality
  - Different forms of interaction – e.g., strategic vs. cooperative behavior
- We observe both competition/selfishness and cooperation/other-regarding behavior. How to understand this phenomena? Implications for public policy

# Introduction (cont.)

- Explanations of cooperative/ other-regarding behavior:
- Solution I: Expand the model of rationality as maximizing individual utility (RMIU) to include internal motivation (e.g., warm glow)
- Solution II: People are of different types – plural personalities
- Solution III: Plural rationalities supported by different institutional structures
- This presentation: Develops the latter position. Adds to complexity theory by explicitly including institutional aspects:
  - Distinct individual and institutional element
  - Institutions are both
    - **Rationality contexts** – context specific rationalities
    - Deliver specific solutions to specific coordination problems

# Outline

- Observed behavioral 'anomalies'
- Developing an explanation – the IRC hypothesis
- 'Testing' the IRC hypothesis
- Implications for policy
- Conclusion



# 1. Observed behavioral 'anomalies'

- The basic expectation: People only cooperate when it is individually beneficial to do so
- Substantial 'real life' evidence of the opposite
  - Anthropological, ethnographical and sociological studies (e.g., Murdock 1967) shows that people cooperate under many circumstances where it is not individually rational to do so
  - Studies of common property management (e.g., Ostrom 2005) document similar experiences, but that cooperation is not necessarily easy to establish nor to sustain

# 1. Observed behavioral 'anomalies' (cont.)

## Ex. from experiments I: Ultimatum games

- Format
  - A proposer gets a sum of money (e.g., 100 \$)
  - S/he is asked to split the sum between him/her and a respondent that is unknown to the proposer
  - If the respondent accepts the split, they get the money as divided by the proposer
- 50-50 is the dominant split
- Offers below 30 % are often rejected
- A positive offer from the proposer can be explained by fear for the deal being turned down
- A rejection of any positive offer do, however, not fit the neoclassical/RMIU model

# 1. Observed behavioral 'anomalies' (cont.)

## Ex. from experiments II: Dictator games

- Format:
  - The rules are as in the case of the ultimatum game, except the provision that the respondent cannot turn the bid down
  - Hence, this game takes away any strategic motive for the respondent to offer a positive sum of money to the respondent – no fear of being turned down
- 70-30 is the dominant offer. A substantial number of people offer a positive sum to the respondent (The Forsythe et al. (1994) study documents that 80 % do so)



# 1. Observed behavioral 'anomalies' (cont.)

## Ex from experiments III: Public goods game

- Typical format:
  - The individual participants gets a sum of money per round – e.g., 1 \$
  - For each dollar put on a common account each player gets half of what is posted, e.g., 50 cents
- If number of participants ( $n$ )  $>$  2, cooperation pays in this case
- Still, defecting will be the individually 'rational' to do



# 1. Observed behavioral 'anomalies' (cont.) Ex from experim. III: Public goods game (cont.)

- Typical results:
  - Quite substantial levels of cooperation – even in one shot games
  - If no explicit retaliation options are offered, cooperation is typically reduced in later rounds. If offered → used to increase cooperation
- Biel and Thøgersen (2007): 40-60 % cooperate in one shot public goods games
- Ostrom (2000) documents similar results:
  - 40 % of participants in a public goods game prefer the cooperative result above the one where they gain the most themselves
  - 25-30 % rank these outcomes as equally good

## 2. Developing an explanation

# Institutions as rationality contexts

- Institutions may be define by what they are and do
  - Are **conventions**, **norms** and **formally sanctioned** rules
  - Provide **expectations**, stability and **meaning**; regularize life; support values and protect and produce interests
  - **Interdependency** – coordinate behavior/'settle conflicts'
- This definition places this presentation within the tradition of classical institutional economics
  - '**Classical**' **inst econ**: institutions → construction of man
  - '**New**' **inst econ**: institutions as external rules only
- There is a necessary link between the understanding of behavior and the definition of institutions

## 2. Developing an explanation (cont):

# Rationality

- Individual rationality: 'I' rationality, where one format is that of maximizing individual utility
- Social rationality: Benefits the group
  - May solve Prisoners' dilemma/Public goods game type problems
  - 'We' rationality
  - 'They' rationality – altruism (actually: benefits others only)
- Plural rationality
  - 'I' vs. 'We' vs. 'They' rationality
  - Demands a 'super structure' for people to observe when which rationality is expected or permissible
  - Boundedness/restricted capacity (is always there)



## 2. Developing an explanation (cont)

# What institutions do

- Institutions are communicative devices – broad meaning
  - **Rationality contexts** → signal which logic pertains
  - Define ‘rules’ that are specific for specific settings – support individuals with restricted capacities
- Individual rationality is constructed – e.g. the capitalist firm/the corporation etc.
- Shogren:  $U=U(x) | I$
- Social rationality is constructed. Different spheres
  - Family; local communities; policy/management bodies
  - Waste treatment, irrigation systems; weddings; funerals



## 2. Developing an explanation (cont)

# What is different from alternative models?

- Extended RMIU – institutions are invisible
  - Andreoni:  $U=U(x, G, g_i)$  ('warm glow')
  - Frey (intrinsic motivation); Brekke et al. ('self-image')
- Different individual types – institutions form individuals, but it is still about utility
  - Gintis:
    - homo economicus; homo equalis; homo reciprocans; homo parochius
    - different utility functions
  - Ostrom:
    - 'norm using players,' conditional cooperators,' 'willing punishers'
    - second-generation models of (bounded) rationality – utility function with delta parameters

## 2. Developing an explanation (cont)

### What I try to add

- Institutions as rationality contexts – a specific focus on the interaction between institutions and individuals
- Plural rationalities
- Methodological individualism
- Methodological relationism (as different from methodological holism)
  - Individuals  $\leftarrow \rightarrow$  institutions – two irreducible levels
  - Combining intentional and causal explanations
  - **I<sub>1</sub>**: Individual interests only (Max U?);
  - I<sub>2</sub>**: Consider what is right, what is best for the group;
  - I<sub>3</sub>**: Do A!

### 3. 'Testing' the IRC hypothesis

- Evidence of plural rationality?
- If so: What make people shift between rationalities? Genetic vs. institutional explanations



### 3. 'Testing' the IRC hypothesis (cont.) Do plural motivations exist?

- Gardner on multiple intelligences -
  - 7 intelligences – e.g., linguistic, logical-mathematical, personal [intra (individual) and inter (social)]
  - Individual and social intelligences are culture specific
- Batson on altruism:
  - Tests 'empathy-altruism' hypothesis against different versions of egoism (e.g., 'internal reward' egoism; 'aversive-arousal reduction' hypothesis)
  - He proves the existence of altruistic behavior – given the various definitions of egoism used
  - Other ways of understanding egoism can be constructed, though...



### 3. 'Testing' the IRC hypothesis (cont.)

## Do plural motivations exist? (cont.)

- Do we have the capacities to perform generalized calculations?
- Brain research (MacLean/Tancredi): Most probably no
  - The brain is compartmentalized – evolutionary structure
  - Various decision problems involve different parts of the brain; different hormones etc. E.g., the role of the amygdala (feelings) in decision-making
- Evolutionary biology (Sober and Wilson):
  - Strong arguments for 'evolutionary altruism'
  - 'Psychological altruism': Hard to prove, but evolution favors plural rationality – as long as cooperation is evolutionary beneficial for the human species

### 3. 'Testing' the IRC hypothesis (cont.)

## Do institutions influence the type of motivation?

- The gene – culture co-evolutionary hypothesis (Boyd and Richerson)
- Evidence from social anthropology/ethnography
  - Cultural variation
  - Cultural absorption
- Experimental economics:
  - Under certain institutions, we come quite close to RMIU (e.g., Shogren)
  - Other logics are also apparent: Reciprocity; equality etc.
  - Moreover: It is not always 'just a game.' All behavior is not strategic. However, not much research done where the institutional context is systematically changed to test the kind of hypothesis discussed here

### 3. 'Testing' the IRC hypothesis (cont.)

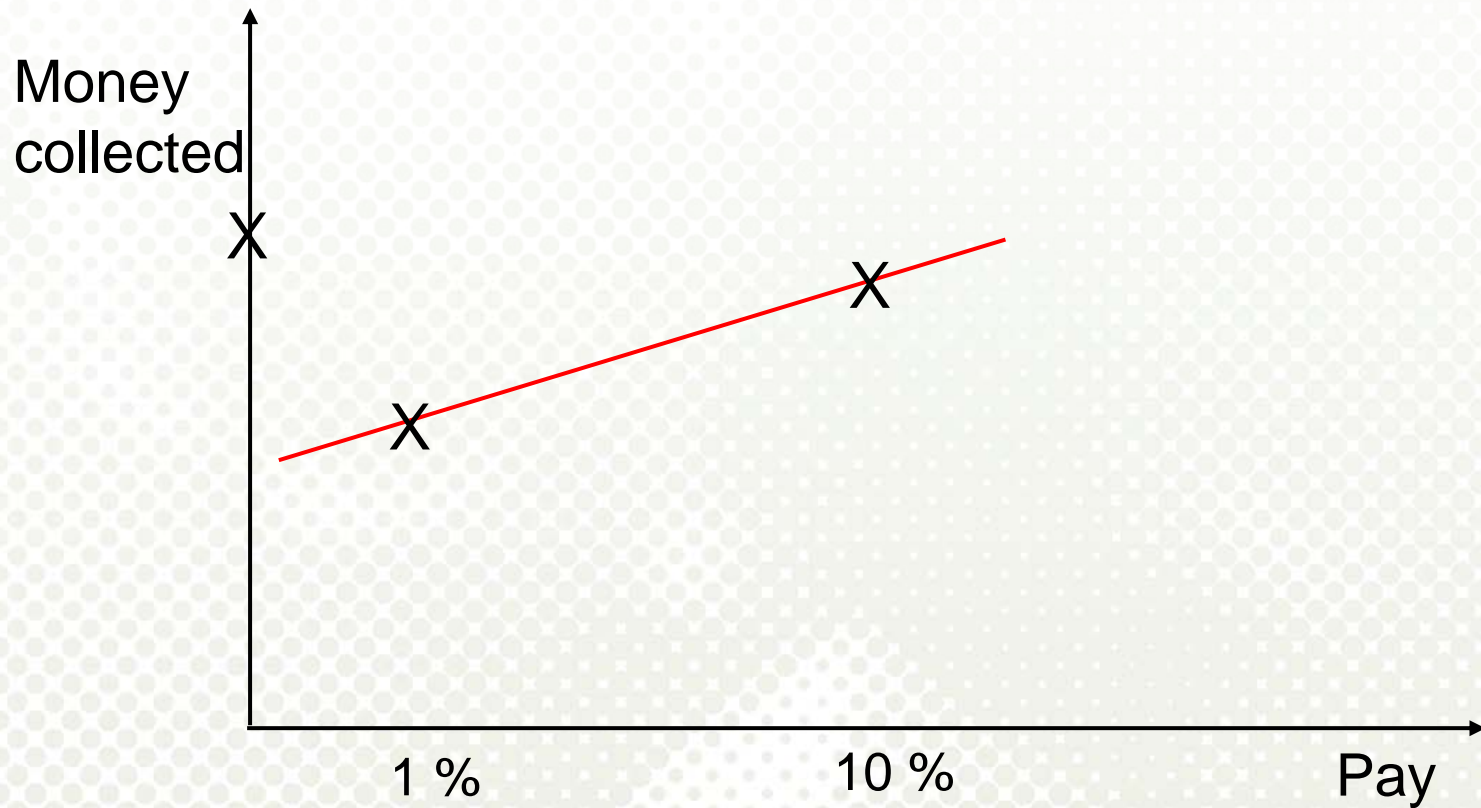
## A few experiments with institutional changes

- The 'Community' vs. Wall street game' experiment: Equal payoffs, different name → different level of cooperation (Ross and Ward)
- The day-care example where introducing a fine for late-coming resulted in increased late-coming (Gneezy and Rustichini)
- Public goods games with communication (Ostrom et al. 1994)
- The donation experiment (Gneezy and Rustichini 2000)
- The wage experiment by Fehr and Gächter (published in Fehr and Falk 2002) shifting from no incentive to incentive wages



### 3. 'Testing' the IRC hypothesis (cont.) Collecting money to a charity

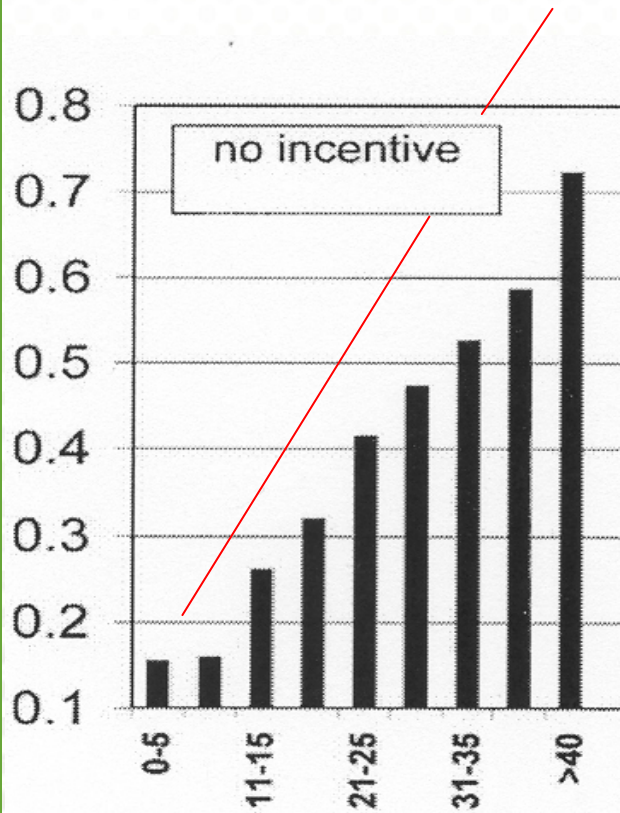
- Moving from non-paid to paid action



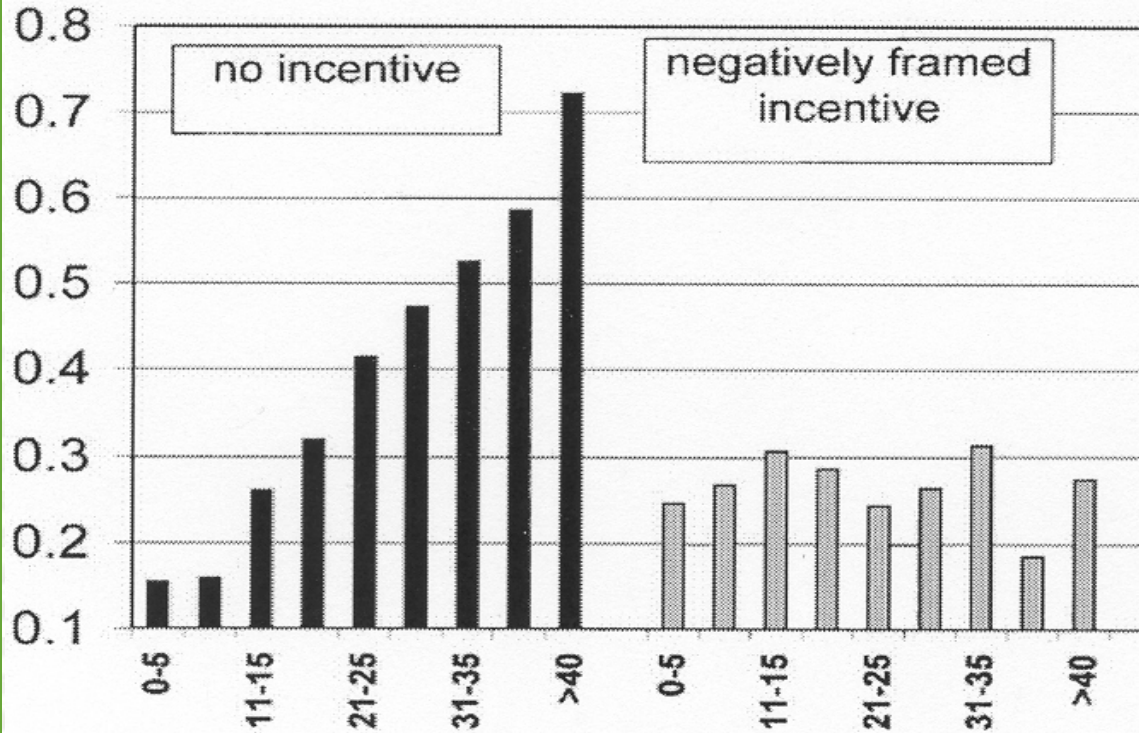
Source: Gneezy and Rustichini 2000



### 3. 'Testing' the IRC hypothesis (cont.) Wage experiment



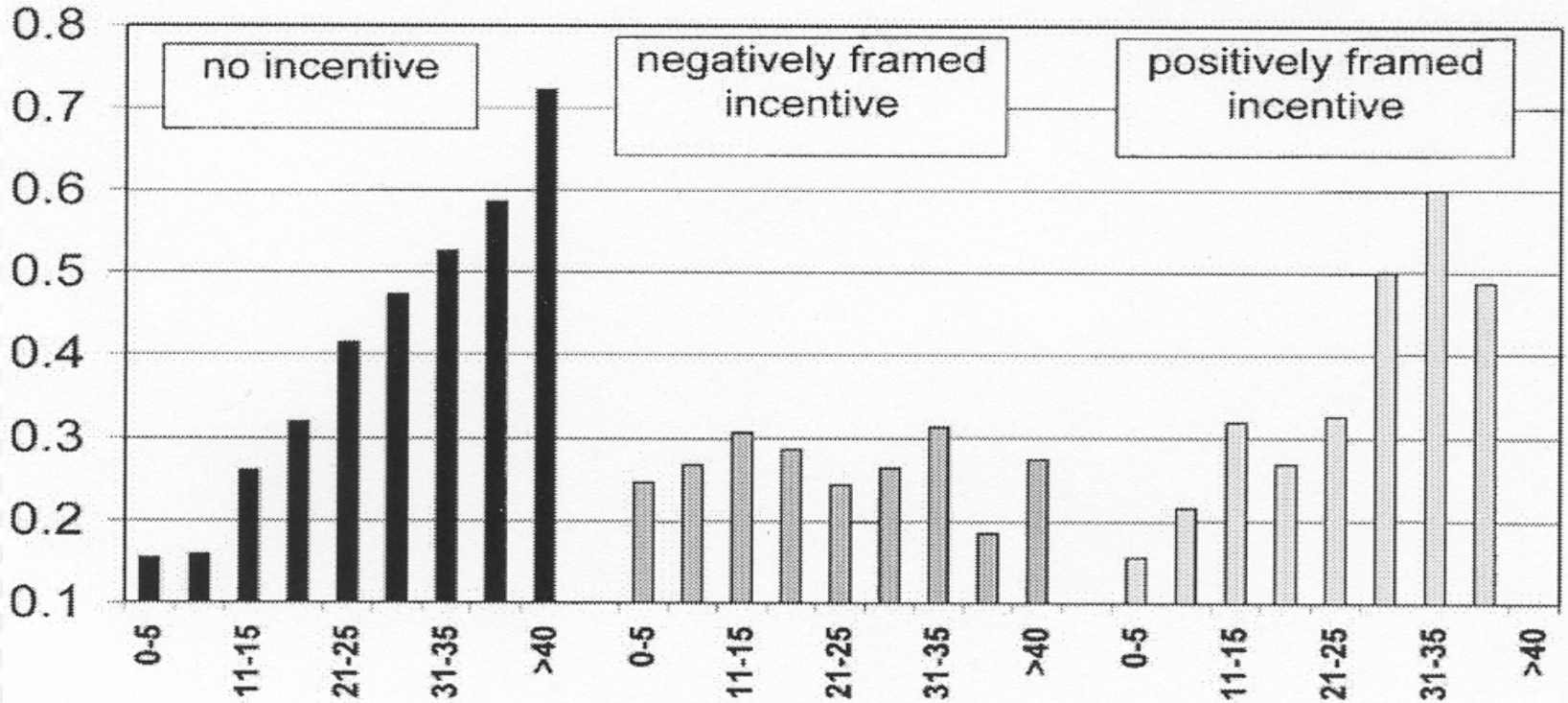
### 3. 'Testing' the IRC hypothesis (cont.) Wage experiment



Fehr and Falk (2002)



### 3. 'Testing' the IRC hypothesis (cont.) Wage experiment



Fehr and Falk (2002)





## 4. Implications for policy

- Policy instruments not only offer 'incentives'. They may reframe the issue
- Economic instruments may 'crowd out' civic duties. How to balance the signals here, as economic instruments would have to play a substantial role in the future
- The IRC hypothesis points towards 'new' opportunities
  - Changes in preferences and norms – transferring norms from one area to another
  - Creation of new forms of cooperation – e.g., socially rational firms?
- The creation of institutions fostering social rationality is very important for solving urgent environmental challenges like climate change. Demands the expansion of solidarity beyond the 'local' group

## 5. Conclusion

- No definite proofs – but quite strong and coherent messages across disciplines:
  - Rationalities are plural
  - Institutions support individuals in understanding which logic is expected
- This holds very important implications for environmental policy
- The findings seem to support a search for a methodology going beyond methodological individualism → Methodological relationism or interactionism