

# **Resource Management: INSTITUTIONS AND INSTITUTIONAL DESIGN**

SOS3508

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## **Why Humans Cooperate**

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## **Literature**

- Henrich, Joseph, and Natalie Henrich. 2007. *Why Humans Cooperate A Cultural and Evolutionary Explanation*. Oxford: Oxford University Press
  1. Evolution, Culture, Cooperation, and the Chaldeans
  2. Dual Inheritance Theory: The Evolution of Cultural Capacities and Cultural Evolution
  3. Evolutionary Theory and the Social Psychology of Human Cooperation
  4. The Chaldeans: History and the Community Today
  5. to 9. Cooperation among Chaldeans
  10. Cooperative dilemmas in the world today

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## Foci for trust investigation

- Kinship
- Reciprocity and reputation
- Social norms
- Ethnicity
  
- Theoretical background
  - Models based on evolutionary game theory
- Empirical investigation
  - Chaldeans in Detroit, ethnography and experiment

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## Co-evolution

- Culture
  - socially learned behaviours, beliefs, values, etc.
- Genes
  - Genetically determined emotions and patterns of reacting

It is assumed that also culture can affect the distribution of genes in a population

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## Cultural evolution

- All cultural traits (learned behaviour, beliefs, preferences, strategies, practices) presuppose the infrastructure of the brain, ear, and vocal apparatus and an ability for complex, high-fidelity learning
- Explanations
  - Ultimate: natural selection -> psychology
  - Intermediate: cultural growth -> learned skills
  - Proximate: genetic and cultural traits drive behaviour

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## Evolved psychological mechanisms for learning culture

- What cognitive learning abilities are needed to extract adaptive ideas, beliefs, and practices?
  - Information is costly, thus the trade-off: less accurate and less costly info may have its advantages; and accumulation of collective (cultural) information is often less costly than individual acquisition
    - Content biased information (content appeals to learner)
    - Context biased information (models for learning appeals to learner)

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## Context bias: success and prestige

- Cues of prestige, success, and skill based on indirect measures leads to rather indiscriminate imitation. Not only traits related to success but a host of irrelevant traits are copied. In a complex world with costly information this strategy is what natural selection would favour
- The evidence for such learning mechanisms is substantial

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## Evidence for selective cultural learning

- Imitation occurs in contexts of monetary incentives in both social and non-social situations
- Imitation occurs across many different contexts (such as beliefs, food preferences, dialects, conflict strategies)
- Imitation increases with uncertainty
- Imitation is not related to how the model's domain of competence relates to the learned item
- Experimental findings and field observations agree

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## Conformity bias

- If indicators of success and prestige seem unrelated to behaviour people tend to imitate the majority
- The propensity for conformist learning increases with how noisy the information about the success of various role models is
- Much empirical evidence supports this particularly when problems are complex
  - Information conformity in solving difficult problems may result in changing beliefs
  - Normative conformity in groups results more often in changes of behaviour without affecting beliefs

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## Conformist learning of behaviour

- In non-social situations such as solving a practical problem or adopting a new technology
  - Conformist bias increase with the importance for high uncertainty problems and decrease with importance for low uncertainty problems
- In social situations when people are uncertain about how to behave they copy others

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## Learning of altruism and selfishness

- Children spontaneously imitate a role model both in altruism and selfishness, and the more a model is observed the more is imitated
- The imitated behaviour remains also without the role model present as long as circumstances are similar
- Children imitate what is done preaching has no effect or a negative one
- Of course, the same process also works on adults

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## Culture-Gene Co-evolution

- Cultural learning is also something we inherit, in time it may affect the genetic composition by changing the selective environment faced by genes
  - Case: lactose absorption in adults everywhere but in populations that had not developed cheese and yogurt technology

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## Evolution and social psychology

- Why do we help others, strangers, even when it is costly to ourselves?
- Often we do not help
- There is a pattern to whom we help: family, friends, acquaintances, strangers
- What are the rules for each group?
- First proximate causes: psychological mechanisms (cpr Elster), preferences
- Second ultimate causes: evolutionary processes producing the psychological mechanisms

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## Cooperation&Prosocial behaviour

- Cooperation means to provide a benefit to some other person or people at a cost to yourself (voting, food sharing, recycling, ..)
- Non-cooperation: defection, free-riding, cheating
- Prosocial behaviour includes cooperation but also altruistic punishment, meaning that a person pays a cost to inflict a cost on another person to uphold a norm or behaviour in a group
- Altruistic punishment may explain some otherwise puzzling forms of cooperation

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## Why cooperate?

- If cooperation is costly: why do anyone do it?
- Case of “food sharing gene”
- Classical evolutionary models unable to explain cooperation
- More recent models can explain it by many different mechanisms
- Human cooperation is different from other species by sometimes involving very large numbers and increasing over historical time. It is also variable across domains of activity

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## Intelligence and cooperation

- Intelligence is not the explanation. Many types of intelligence leads to deceptive behaviour breaking down cooperation
- The variation of cooperation is difficult to explain as a result of intelligence. Only cooperative insects can be compared to the scale of cooperation in humans

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## Social psychology of cooperation

- The core dilemma:  $\beta b > c$  where  $c$  is cost paid by the cooperator in order to deliver benefit  $b$  to another individual or group and  $\beta$  is the propensity for an individual to bestow benefit  $b$ . If  $\beta b > c$  natural selection may favour the spread of genes that code for the proximate mechanisms of cooperation
- Green bearded cooperators and the stability of  $\beta$
- Reliable linking between cooperators is the core dilemma

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## Kinship

- May provide the reliable link by providing the proximate clues that may link cooperators (proximity, similarity, scent, ..)
- Case: mothers with “help infant genes”
- Culture may modify how kinship is conceived (New Guinea: partible paternity)
- Empirically it is a fact that the most costly cooperation is reserved for close kin

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## Reciprocity (1)

- May sustain cooperation in tit-for-tat exchange strategies
- It seems to rare in other species, but abundant in human societies because of the cultural leaning capacity, but also fragile based on ability to judge past behaviour
- Direct reciprocity as in the prisoner's dilemma
- TFT strategy works well if group is small and number of interactions is sufficiently large
- Other factors: noise, ecology of strategies, networks and partner choice
- Noise may require less provocativeness and more generosity or maybe contrite strategies (susceptible to errors of perception). Good memory is not an advantage.

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## Reciprocity (2)

- Duration
  - NICE strategies starts with cooperation and depends on clues to duration
    - Be nice if you think interactants are long term
    - Be not-nice in short term interactants
    - Be wary first then nice if the population is mixed
- Ecology of strategies
  - For any strategy there is a mix of other strategies that will destroy it
  - Cultural learning may be the only mechanism that can make cooperators adapt their strategies to new ecologies

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## Reciprocity (3)

- Social networks and partner choice
  - Recent experiences are weighted most in selecting partners and leads to networks wher NICE strategies are used. Outside it is not
- Reciprocity in non-humans is rare
  - Because of shifts in the ecology of strategies, noise in signalling and group size.
  - The all-purpose reciprocity mechanism does not exist
- Humans are different
  - Due to cultural learning on how to adapt to a shifting mix of strategies. Culture changes much faster than genes. Genes provide learning ability, culture provides the learning by imitation and experience the local ways of reciprocating

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## Reciprocity Psychology

Table 3.2 Heuristic Categories of Direct Reciprocity

Categories of partners	Context and ecology	Psychology and behavior
	Substantial noise—exchanges across many domains	CONDITIONALLY NICE GENEROUS CONTRITE
Close friends	High $b/c$ Longer memories of important interactions Small # of preferred partners (memory constraints)	
Distant friends, and other acquaintances	Low noise—in-kind, 1-for-1 exchanges Medium $b/c$ Short memories of interactions Potentially large # individuals	LIMITED NICE PROVOKABLE NOT GENEROUS
Others	$n$ -person dilemma (public goods situation) Short time horizon (low $\omega$ ) Low $b/c$	SUSPICIOUS PROVOKABLE

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## Indirect reciprocity and reputation I

- Involves knowledge of behaviour outside the current interaction (history or reputation)
- Dissemination of information is a key and social norms may strengthen it
- Little theoretical work done, but it suggests that group size and accuracy of information are critical. Norms about gossiping important for accuracy. Strategies of reputation assessment
  - Scoring: condemn anyone not helping given the chance
  - Standing: condemn anyone not helping those with good reputation
  - Judging: condemn anyone not helping those with good reputation and those who help those with bad reputation

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## Indirect reciprocity and reputation II

- Assessment needs linking to action. Helping those with good reputation outcompete strategies involving helping those with bad reputations. Unconditional altruists are destructive for cooperation
- Cultural evolution seems to have linked reputation to kinship and conceptualised it as transmitted through genealogical lines
- Culture may improve on reputational information, but it has to be accurate. In this cultural learning mechanisms help

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## Indirect reciprocity III

- Ethnic bias in interaction is part of this process
- Costly cooperative acts may function as signals to future cooperators, this require spectators/ observers
  - If reputation effects are possible it should increase cooperation
  - Interacting with strangers should trigger SUSPICIOUS strategy
  - Individuals are unlikely to cooperate in large groups unless reputation building is involved
  - Dense, bounded networks sustain most reputation based interaction
  - Few public goods problems will be solved by reputation based interaction
  - Culturally transmitted beliefs tie reputations to kin and will promote cooperation and conformity

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## Social norms

- Prescribes, prohibits or permits behaviour
- Is found in the minds of people, their beliefs, and attached to often strong emotions (anger, guilt, shame)
- Are culturally learned and enforced by punishment
- Stabilized by prestige bias and conformist transmission
- Norms affecting costly cooperation are not exempted
- Through group competition norms benefitting groups may spread in a larger population
- Then evolution may favour prosocial genes resulting our social norms psychology
- Following costly norms, vs punishing those breaking the costly norm vs punishing those who do not punish norm breakers: conformist transmission may stabilized the norm fairly cheaply independently of any benefit
- Group competition will further the spread of prosocial norms

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## Ethnicity, norms and cooperation

- Our ethnic psychology may be explained as a coordination problem solution (reinforced by punishment and reputation mechanisms)
  - People use ethnic cues to figure out whom to learn from
  - People prefer to interact with individuals sharing their ethnic markers
  - This results in sharing of beliefs, norms, and values among people sharing ethnic markers
  - This leads to clustering both socially and geographically
  - Ethnic markers tend to be hard to fake providing reliable signals about norms

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