

## What happens if there is no contact at all

- Monkeys in solitary confinement
- Humans in harsh orphanages

## Social emotions

## Altruism towards non-kin

## Animals are nice to non-kin

- Grooming
- Warning cries
- Shared child care
- Food sharing
  - e.g., vampire bats

## How could this evolve?

- Individuals benefit more by working together than working alone -- the benefits outweigh the costs -- reciprocal altruism
- But ...

## The problem of cheaters

- Cooperation is unstable
- Advantage to genes that lead animals to reap the benefits without paying the costs
- Gene A: Accept blood from others; share blood
- Gene B: Accept blood from others; don't share blood
- Gene B will out-reproduce Gene A
- So how can altruism evolve?

## Cheater detection

- Reciprocal altruism can only evolve if animals punish cheaters
- This requires a lot of mental apparatus:
  - recognizing cheaters
  - remembering those individuals
  - motivation to punish

## A case-study of cooperation: The Prisoner's Dilemma

### What all PDs share

- The best case is to defect while the other person cooperates
- The worse case is to cooperate while the other person defects
- Best for both is if each cooperate
- Worse for both is if each defect

### The puzzle

- Regardless of what your opponent does, it pays to defect
- But if both people defect, both are worse off!

		MY SPOUSE	
		NO	YES
ME	NO		
	YES		

		MY SPOUSE	
		NO	YES
ME	NO	We both do ok	
	YES		

		MY SPOUSE	
		NO	YES
ME	NO	We both do ok	
	YES	I get everything Spouse loses everything	

		MY SPOUSE	
		NO	YES
ME	NO	We both do ok	I lose everything Spouse gets everything
	YES	I get everything Spouse loses everything	

		MY SPOUSE	
		NO	YES
ME	NO	We both do ok	I lose everything Spouse gets everything
	YES	I get everything Spouse loses everything	We both do pretty badly

		COUNTRY B	
		NO	YES
COUNTRY A	NO		
	YES		

		COUNTRY B	
		NO	YES
COUNTRY A	NO	Both do ok	
	YES		

		COUNTRY B	
		NO	YES
COUNTRY A	NO	Both do ok	
	YES	A gets everything B loses everything	

		COUNTRY B	
		NO	YES
COUNTRY A	NO	Both do ok	B gets everything A loses everything
	YES	A gets everything B loses everything	

		COUNTRY B	
		NO	YES
COUNTRY A	NO	Both do ok	B gets everything A loses everything
	YES	A gets everything B loses everything	Both do pretty badly

## The competition

63 computer programs

### The winner

Tit-for-Tat (TFT) (by Anatol Rapoport)

- (1) The first time you meet a new program, cooperate
- (2) After that, do on each trial what the other program did on the previous trial.

## TFT

- NICE - starts friendly
- NOT A SUCKER -- If you defect, it will defect back
- FORGIVING -- Once you're nice, it'll be nice right back
- TRANSPARENT - Easy to figure out how to work together for mutual gain

## Social emotions and the prisoners dilemma

- We feel GRATITUDE and LIKING for people who cooperate with us. This motivates us to be nice to them in the future
- We feel ANGER and DISTRUST toward those who betray us. This motivates us to betray or avoid them in the future
- We feel GUILT when we betray someone who cooperates with us. This motivates us to behave better in the future

## The Ultimatum Game

- A has \$10
- A can give B any amount he or she chooses (from \$1 - \$10).
- B can either accept it, or reject it (if reject -- then nobody gets anything)

## The moral of the Ultimatum Game

- \$1 is better than nothing
- Therefore a rational person should accept \$1
- Therefore A should offer \$1

## But people are not purely rational

- They won't accept unfair distributions
- They'll reject them just out of spite
- Therefore A has to offer more

## The usefulness of irrationality

- A rational person is easily exploited
- Response to provocations and assault will always be measured and appropriate
- A person with a temper has an advantage
- "Mess with me and I'll kill you."
- If this is convincing, the person won't be messed with

- major cause of murder is insult, curse, petty infraction
- "In chronically feuding and warring societies, an essential manly virtue is the capacity for violence. To turn the other cheek is not saintly, but stupid. Or contemptibly weak."

## The importance of reputation depends on the culture

### Cultures of Honor

- can't rely on the law
- resources that are easily taken  
(e.g., herders)
- A reputation for excessive violent  
retaliation is essential to keep your  
resources

### Cultures of Honor

- Scottish Highlanders, Masai warriors,  
Bedouin tribesman, Western cowboys
- American South
- settled by Scottish and Irish herdsman
- less centralized legal control

## What difference does it make?

- Gun laws
- Corporal punishment and capital punishment
- attitudes toward the military
- more forgiving towards crimes of honor
- higher rate of violence, but in certain circumstances

## Honor as a psychological phenomenon

- Nisbett and Wilson
- University of Michigan undergraduates
- White males, non-Hispanic, non-Jewish
- Provocation
- Differences in testosterone, cortisol
- Differences in later behavior
- Not overall more violent

## Overall summary

- Fear, love towards kin, anger, gratitude, etc. are not aberrations or “noise” in the system
- Rather they are complex motivational systems exquisitely crafted to deal with the natural and social environment

“Everything is the way it is because it got that way.”

-- D’Arcy Thompson

## Response #5

It is often said that people are intrinsically selfish. Everything we do -- including acts that appear to be generous or kind -- are actually done out of self interest.

Do you think this is true? In your answer be sure to discuss kin selection, reciprocal altruism, 'selfish genes' and the difference between ultimate and proximate explanations..