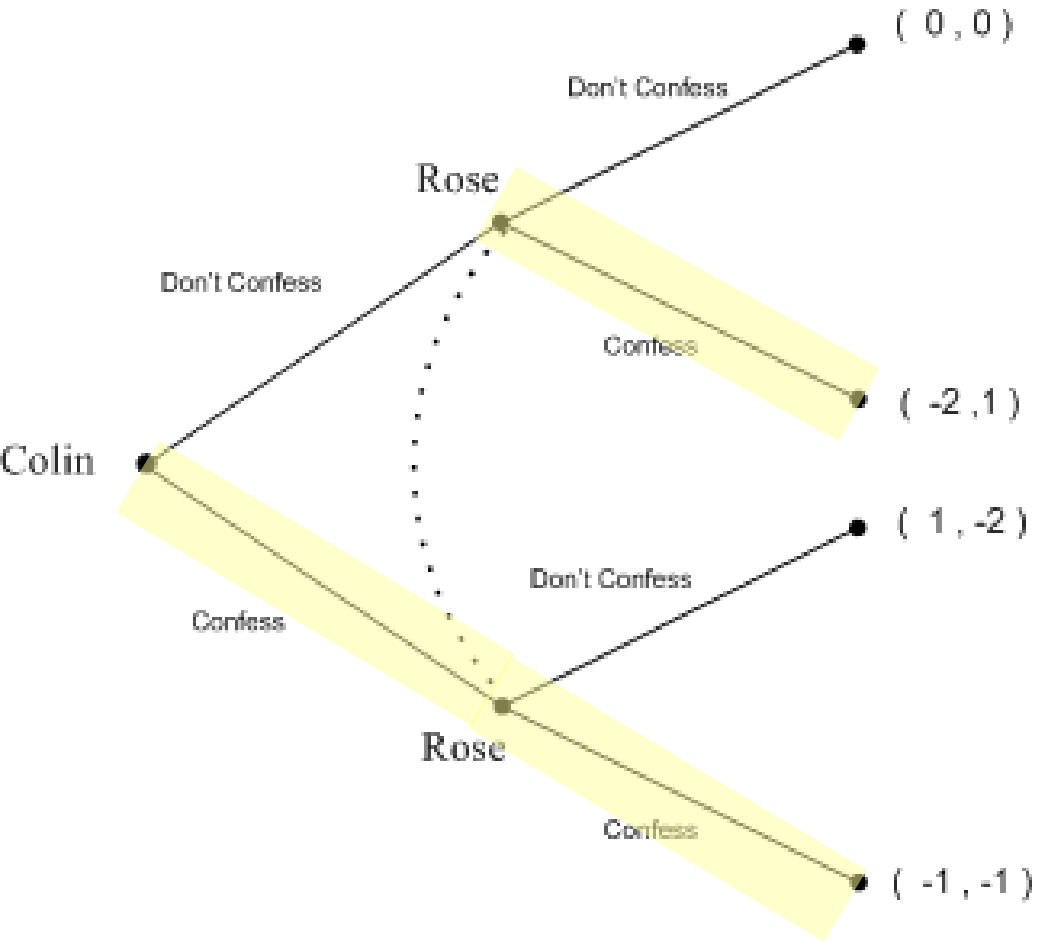
Chapter 13.
Application to Social Psychology: Trust, Suspicion and the F-Scale

- Experimental Games
- Personalities and the Prisoner's Dilemma
- Free-Riders and Public Goods
- Learning How to Play Games

Experimental Games

- We know how people "should" play the game based on game theory
- How do people really play games?
- Also known as experimental economics
- Contrast this with simulation and gaming and experimental psychology approaches
- Game theorists claim that psychologists are finding the exceptions to the rules; biases and heuristics

Solution of the Prisoner's Dilemma



Payoffs (Rose, Colin)

- Both players "confess" on each other
- Resulting in an equilibrium which is not Pareto optimal

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Actual Play of the Prisoner's Dilemma

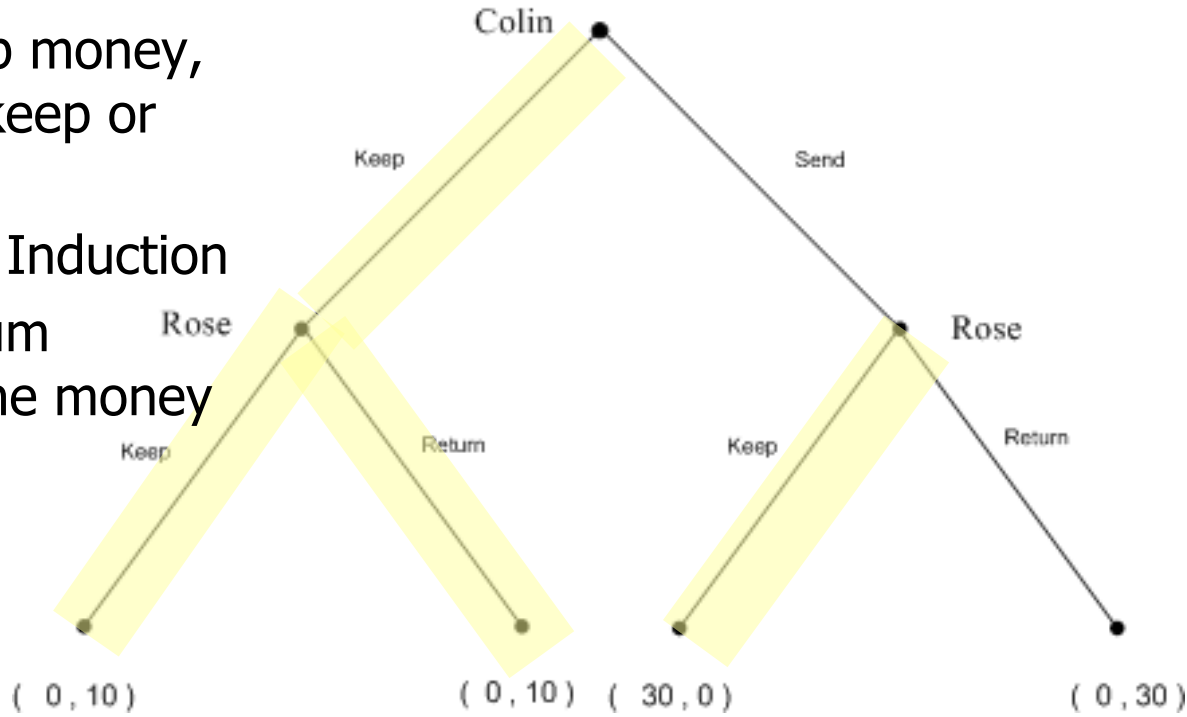
- Deutch (1958, 1960) tested subjects using a psychological inventory of authoritarianism
- Then, Deutch had players play an experimental game based on the Prisoner's Dilemma
- More authoritarian personalities are more suspicious and also more untrustworthy
- Is this innate behavior or learned behavior?

Public Good Game

- Berg (et al., 1995) had participants play two "trust games:
- These trust games have become known as "public goods" games
- Individual citizens are asked to contribute to public goods, trusting that other citizens will also contribute
- Public goods, such as infrastructure, deliver a substantial return on investment
- But there is the danger of free riders!

Solution and Actual Play of the Trust Game

- Colin may send or keep money, and (if sent) Rose may keep or return the money.
- Solution by Backwards Induction
- Pure strategy equilibrium involves Colin keeping the money
- Actual play:
  51% were trusting,
  28% were trustworthy
- Not consistent with game theory model



Payoffs (Rose, Colin)

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Solution of the Social History Game

		p: Colin Keep	(1-p): Colin Send
Rose	Keep	(0,10)	(30,0)
q	Return	(0,10)	(0,30)
(1-q)	Keep if Keep Return if Send	(0,10)	(0,30)
	Return if Keep Send if Keep	(0,10)	(30,0)

Payoffs (Rose, Colin)

- Suppose both parties believed that 1/3 of participants would send and receive. Is this consistent with rationality?

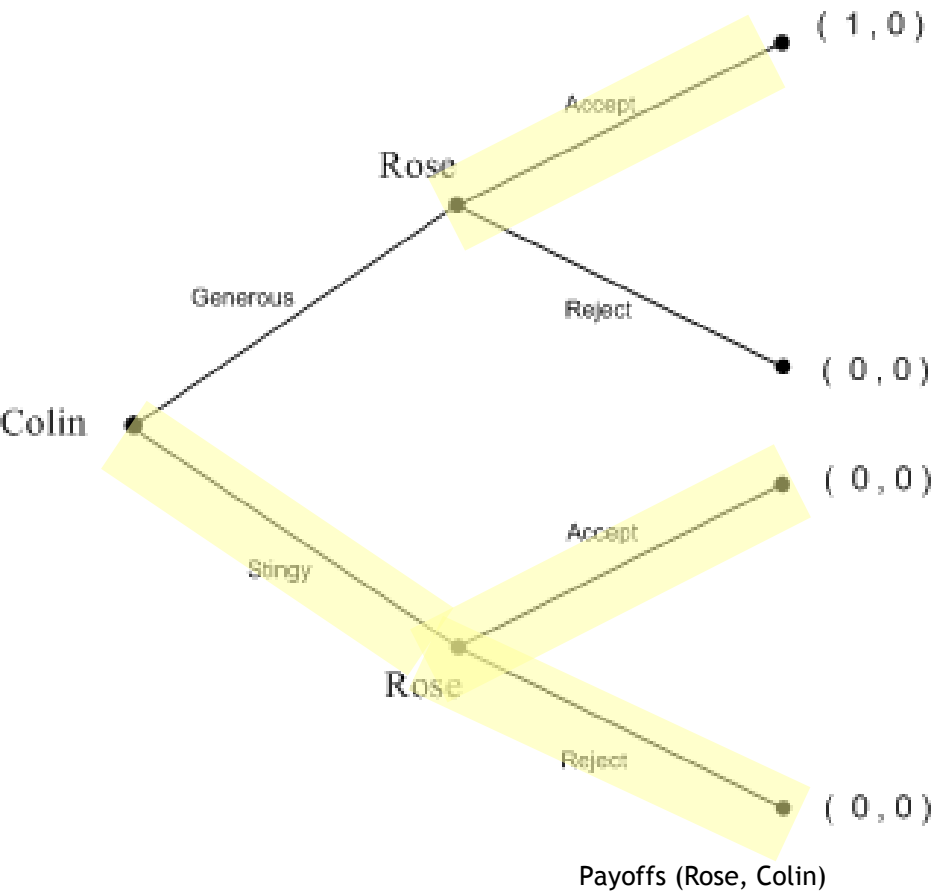
- Colin would send in some mix, receiving 10.
- Rose would return in some mix, receiving 10.
- Beliefs could be maintained.
- Perfect Bayesian Equilibrium

Actual Play of the Social History Game

- 46% of players were trusting
- 33% of players were trustworthy
- No substantial differences with the trust game
- Bayesian Equilibrium maintained
- Amount invested a significant predictor of fraction of rewards achieved
- Players were just a little better off playing in this manner (11.1 vs 10.0)

For more details see Trust, Reciprocity, and Social History (Berg et al., 1995) i.e. at http://econ.ucsd.edu/~jandreon/Econ264/papers/Berg%20et%20al%20GEB%201995.pdf

Ultimatum Game and Solution



Payoffs (Rose, Colin)

- The ultimatum game (played at left) is related to a one-shot bargaining game
- Related to Rubinstein bargaining
- Has strong first mover advantage – Colin keeps it all, and Rose must accept the offer
- In experiments with repeated games, under cost or time pressure, a 50%/50% split is achieved

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Actual Play of the Ultimatum Game

- Roth and Erev (1995) note that (unlike other games) the play of the ultimatum game does not match theory
- Note however that they have a repeated game against different opponents
- Play of the game varies by country!
- Roth and Erev argue that there are beliefs about the way fellow countrymen play the game
- Culture

For more details see A. Roth and I. Erev, “Learning in Extensive-Form Games: Experimental Data and Simple Dynamic Models in the Intermediate Term," Games and Economic Behavior, 8 (1995), 164-212. i.e. at http://kuznets.harvard.edu/~aroth/papers/liefg.pdf

Predicting How People Play Games

- Roth and Erev (1995), Erev and Roth (1998)
- Meta-analysis from previous experimental studies
- Many games quickly approach perfect equilibrium
- Argues that a simple, one parameter model of learning best explains how people actually play games
- This is "low rationality"
- The authors argue that "high rationality" models involving belief don't substantially outperform low rationality