Clicker quiz: Should the cocaine trade be legalized?

• 1. yes
• 2. no
Review: What is the role of the state:

- To ensure competition in the market
- Why?
  - It’s the most efficient
  - Ensures the most freedom
- If the state doesn’t ensure competition, *monopolies* will develop—undermining freedom
- States also protect competition by regulating externalities

Fred Hayek

Milt Friedman
Example: A spontaneous Cocaine market

In an ideal economic system, goods worth more than they cost to produce get produced, goods worth less than they cost to produce do not;

In a perfectly competitive private property system, producers pay the value of the inputs they use when they buy them from their owners and receive the value of what they produce when they sell it. If a good sells for more than it costs to produce, the producer receives more than he pays and makes a profit; if the good sells for less than it costs to produce he takes a loss. So goods that should be produced are produced and goods that should not be produced are not.
Coca supply is abundant.....production costs low... 
processing is easy and cheap, market is large.
Demand is High and steady

![Graph of Powder Cocaine and Crack Cocaine demand from 2000 to 2003, showing high and steady demand.](image)
Illegality represses demand and supply, raising the price
So It’s rational to produce coca.....

Corn: $150 per acre
Livestock: few $ per acre
Cocoa: $5-10,000 per acre

What crop would a rational farmer grow?
And rational to sell it.....
Governemnt should foster competition: Illegality and high prices create drug lords with market monopoly. Monopoly creates.....

Obscene profits for drug lords

Pomona, CA
1/18/2006
$1,390,965.00 U.S. Currency
Govt. efforts to make the market illegal means coercion
And creating a nightmare of jails filled with casual drug users.....
The Economic Liberal believes: The War on Drugs suppresses Freedom...
Summary:

• People make rational choices
• Rational people create spontaneous markets,
• Thus markets are “natural” and should be free
• Free exchange creates “true” prices
• Thus states should stay out of markets…..
• Their job is to ensure competition, not foster cooperation
• States will never be powerful or wise enough to suppress natural and spontaneous markets
Calculate whether you should join a study group for your classes: What is the most rational way to achieve your education goals?

1. Competition with other students
2. Cooperation with other students
Rational Choice Theory shows that competition is rational

- assumptions
- strategic interaction and prisoners dilemma
- Argue that cooperation is best for all but it’s hard to get: the problem of collective action
- Discuss the argument that Institutions and governments are necessary to ensure cooperation---
- Rather than through government, problems of cooperation can be solved through the market mechanism: Coase Theorem
What about the “rationality” assumption?

- the same as in economic liberal theory
  - Individual freedom and equality
  - Self interest
  - Rationality
  - Shaped by constraints and incentives
    - Costs and benefits
    - The Strategic environment
    - Strategic interaction
Rationality and Game Theory: When individual rationality can be irrational and competition suboptimal

- Why Game Theory?
  - A Game is a Model of reality:
  - Game:
    1. Players
    2. Strategies:
    3. Payoffs:
Game of getting what you want: The Stag Hunt-
Cooperation is optimal but rarely achieved: Here is what the calculations look like:

Let's assume capturing a rabbit gives a payoff of 3, capturing the stag gives a payoff of 5 to each person, and capturing nothing is a payoff of 0.

By nature of the game, if a player pursues the rabbit, he's guaranteed a payoff of 3.

On the other hand, if a player pursues the stag, the payoff depends on the other person's choice. If the other person also chooses stag, then the stag is captured and each gets a payoff of 5. If the other person chooses rabbit instead, then the player captures nothing and gets a payoff of 0.

The game can be solved by looking for the best responses. For each choice the other person might make, consider what's best for you. A Nash equilibrium occurs when both players are picking best responses.

What are the best responses? There are two choices to consider.

First, consider if the other person picked stag. In that case, it makes sense to pick stag (5) over rabbit (3).

Second, consider if the other person picked rabbit. Now, it is more sensible to pick rabbit (3) rather than stag (0).

The best responses for each player are:

- Rabbit is a best response to rabbit
- Stag is a best response to stag

This leads us to two Nash equilibriums in pure strategies (no mixing): both picking stag and both picking rabbit.

What's going to happen?

The above analysis means there are two reasonable outcomes. It is possible both players go for rabbit, or both players go for stag.

This is a comforting solution as it demonstrates selfish incentives can produce social cooperation. Because the stag is a large prize, it's possible both players will cooperate and achieve it. In fact, this outcome is the best – each player can be made better than the rabbit outcome. Hence, the stag outcome is said to be Pareto optimal.

But is there something wrong with this outcome? On closer inspection, you might realize the stag equilibrium is risky. If you pick stag, and the other person does not match you, you end up with nothing. If you were a real life hunter a few hundred years ago, you might feel embarrassed. You would have to go home to your family and explain that you had a chance to bring home rabbit and feed everyone, but you instead were going for the big prize and failed. And the reason everyone is starving, you would suggest, is that your partner was stupid. I imagine such answers were the source of many domestic arguments.

The rabbit equilibrium is less risky, and in this particular story, it has no risk. By choosing rabbit, you are guaranteed a tasty meal and a payoff of 3, regardless of what he other person does.

This is why the rabbit equilibrium is called risk dominant. Although it has lower payoffs to each party than stag, picking rabbit might make sense because it is the "safe" option.

<table>
<thead>
<tr>
<th></th>
<th>ME</th>
</tr>
</thead>
<tbody>
<tr>
<td>stag</td>
<td>5, 5</td>
</tr>
<tr>
<td>rabbit</td>
<td>0, 3</td>
</tr>
</tbody>
</table>

<table>
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<tr>
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<tbody>
<tr>
<td>stag</td>
<td>3, 0</td>
</tr>
<tr>
<td>rabbit</td>
<td>3, 3</td>
</tr>
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</table>
That’s a second game: the prisoners dilemma

There's a HIGH Payoff, a SUCKER payoff, and LOW payoff

With those outcomes, the logical choice is to defect from the advance agreement and betray your partner. Why? Consider the choices from the first prisoner's point of view. The only thing the first prisoner cannot control about the outcome is the second prisoner's choice.

Suppose the second prisoner remains silent. Then the first prisoner earns the “temptation” payoff (zero years in jail) by confessing but gets a year in jail (the “high” payoff) by remaining silent. The better outcome in this case for the first prisoner is to confess. But suppose, instead, that the second prisoner confesses. Then, once again, the first prisoner is better off confessing (the “low” payoff, or two years in jail) than remaining silent (the “sucker” payoff, or three years in jail).

Because the circumstances from the second prisoner's point of view are entirely symmetrical to the ones described for the first, each prisoner is better off confessing no matter what the other prisoner decides to do.
What would you do?

1. Confess
2. Stay silent
# Prisoners Dilemma

<table>
<thead>
<tr>
<th></th>
<th>Stay silent</th>
<th>Cooperate</th>
<th>Defect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOM</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stay silent</td>
<td>Both stay silent, Both get token Sentence (1,1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperate</td>
<td></td>
<td>Tom goes free Tanya does serious Time (sucker) (5,0)</td>
<td></td>
</tr>
<tr>
<td>Defect</td>
<td></td>
<td>Both betray each Other and confess Both get early Parole (3,3)</td>
<td></td>
</tr>
<tr>
<td><strong>TANYA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stay silent</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Defect</td>
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</table>
Even WITH information, what is rational for the individual may be irrational for society as a whole.
Is the Kyoto Treaty a Higher Authority? (payoff is economic/short term)

<table>
<thead>
<tr>
<th></th>
<th>Cooperate</th>
<th>Defect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperate</td>
<td>No Doping, low Payoff expected</td>
<td>Column Dopes, Row doesn’t, Row is a sucker and loses</td>
</tr>
<tr>
<td>Defect</td>
<td>Row dopes, column doesn’t, Row wins, column loses and is a sucker</td>
<td>Everyone dopes, no one Wants to be a sucker, Everyone has high expectations of winning</td>
</tr>
</tbody>
</table>
A Higher Authority is needed...

- To impose costs on doping that are higher than the benefits
- Would Friedman and Hayek agree?
- It worked in 2013
Each of us, acting rationally, contributes to climate change

Economic Goals seem more rational
Is the Kyoto Treaty a vehicle for cooperation?

<table>
<thead>
<tr>
<th></th>
<th>Cooperate</th>
<th>Defect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stay silent</strong></td>
<td>All sign and adhere to the treaty: best for climate</td>
<td>You sign, others Don’t... You are A sucker—noone is better off</td>
</tr>
<tr>
<td><strong>Cooperate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Confess</strong></td>
<td>You sign, others Don’t... You are A sucker—none is better off</td>
<td>All defect everyone is worse off. Worst outcome of all</td>
</tr>
<tr>
<td><strong>Defect</strong></td>
<td></td>
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</tbody>
</table>
Cooperation is optimal, but how do you get it?
You gotta have trust

- hard to move from the low-trust situation, to the more trusting situation.
- You try to achieve what you want on your own because risk that others will defect.
- trust lowers your perception of risk

So how do you get it?
Can Trust be Achieved?

The Problem of Collective Action
rationality is different in large and small groups

**LARGE GROUPS**

- the typical participant won’t cooperate that much—it’s not rational
- No social costs for narrow self-interested behavior
- Large groups trying to cooperate can’t act efficiently
- Selfless behavior is not even praiseworthy.

**SMALL GROUPS**

- More social incentives
- Selfless behavior is rational
- Transparency
- Reputation
- Social pressure
- Interaction
- Trust
- consensus
Prisoners Dilemma can be overcome in a small group if communication is possible and interaction long-term.

<table>
<thead>
<tr>
<th>NUCLEAR ARMS RACE</th>
<th>Cooperate</th>
<th>Defect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooperate</strong></td>
<td>US-Russia</td>
<td></td>
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<tr>
<td></td>
<td>Communication</td>
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<td>Transparency</td>
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<td></td>
<td>Reputation</td>
<td></td>
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<tr>
<td></td>
<td>trust</td>
<td></td>
</tr>
<tr>
<td><strong>Defect</strong></td>
<td>IRAN</td>
<td>NORTH KOREA</td>
</tr>
</tbody>
</table>
Important role of Information

Action
↑          ↑
Desires←Beliefs
↓          ↕
Information

But Good information is difficult to get in Large Groups
Information is difficult to get in large groups and large groups encourage “free riders”
Rational Actors have no incentive to cooperate in large groups.
Who Cares anyway?

- Economic liberals believe that “large group” rationality is endemic to human nature;
- Economic liberals believe that
  - Most incentives encourage narrow, self-interested rationality
  - Our very nature discourages cooperation
Good because......
Markets depend on self-interest and competition to provide the efficiency that produces wealth
But even economic liberals believe that competition isn’t always rational, and institutions (states) can help

• reasons even economic liberals think cooperation might be necessary in a market system:
  – Reduce fraud and cheating
  – Mitigate externalities (neighborhood effects)
  – Create public goods
  – You need cooperation to create Trust. Why?
The Libertarian’s answer to state coordination: Coase Theorem

So, for example, I should have the right and freedom to play my piano whenever I want, but my neighbor has a right to peace and quiet. According to this theorem, if people could bargain at low cost, there would be no problem of externalities and, indeed, the outcome would be the same no matter who had the rights.

Or we could use the market to solve the problem.

My neighbor calculates what his peace and quiet is worth and how much he is willing to pay me for it.

I calculate the cost of restrictions on my playing.

We come to an agreement on the price of peace and quiet.

And my neighbor pays me to restrict the times I’m allowed to play.
Libertarians (economic liberals) say Governments don’t have good information and they make mistakes.

- Brussels Sprouts Farm using pesticides
- Herb Farm that wants organic certification
Let’s look again at the problem of illegal drugs and try to bring all these things together
What would the Coase theorem say?

• When drugs are sold, we are in the presence of a voluntary transfer of property;
• when the transfer is consensual, the risk of inefficiency is low because the parties are engaged in interaction.
• But the consumption and sale of drugs generate externalities that affect third parties. (what could those be?: illnesses fostered by drug consumption, addiction leads to lack of productivity and responsibility etc.)
• Even if the two parties improve their circumstances in the course of a drug exchange, they diminish the welfare of those who may have to suffer the consequences of consumption.
• Whose rights are more important? The rights of traders in the market or the rights of third parties to live in a world without drugs?
• The Coase theorem would say that drugs can be consumed but calls for compensation of victims in cases where drug consumption generates negative consequences for third parties. The parties should negotiate freely. Drug dealers must pay for addition treatment, just like cigarette manufacturers should pay for lung cancer treatment.
Did we show all of this clearly?

• Competition is an essential feature of markets
  – Good because markets coordinate without cooperation
• Why it’s rational to compete
• Why its rational to compete in large groups
• Why cooperation is sometimes better than competition
• How can you get cooperation?
  – Government Authority (political Liberals)
  – Coase Theorem (economic liberals)
The End
• When should the state Take positive action?
  – Intervene in markets when they fail?
  – Regulate in order to minimize externalities?
  – Provide public goods?
  – Provide social safety nets for those who cannot participate in market allocation?

• Liberals are split between those who want the government to protect the market (economic liberals or libertarians) and those who want it to take positive action (political liberals)