

# Crisis Diplomacy

## **Models of Mistrust**

February 5, 2014

# Recap: Scientific Theories

**A theory is a logically coherent set of statements that explain some fact (or facts).**



# Modeling International Politics

**International relations theorists use mathematical models to:**

- Make assumptions transparent**
- Ensure logical coherence**
- Allow for cumulative theory-building**
- Deal with complex strategic scenarios**

# Game Theory

**A set of tools to model strategic decision-making.**

- Players**
- Individual actions → Joint outcomes**
- Payoffs (a.k.a. utilities)**

# Example: The Prisoners' Dilemma

Jack

*Quiet*

*Snitch*

Alice

*Quiet*

*Snitch*

Alice: 1 year Jack: 1 year	Alice: 10 years Jack: scot free
Alice: scot free Jack: 10 years	Alice: 5 years Jack: 5 years

# Solving a Game

**A set of actions is an *equilibrium* if, given what everyone else is doing, no player would prefer to change their own action.**

# The Prisoners' Dilemma

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# Brief Aside

## A Real-Life Prisoners' Dilemma

**Listen to the Radiolab episode "The Golden Rule":**

**<http://www.radiolab.org/story/golden-rule/>**



# The Prisoners' Dilemma and International Conflict

- **Alice and Jack  $\leftrightarrow$  Countries**
- **Keep Quiet  $\leftrightarrow$  Disarm (cooperation)**
- **Snitch  $\leftrightarrow$  Build arms (defection)**

# **The Prisoners' Dilemma: A Crucial Assumption**

**Even if I'm sure you'll cooperate, I prefer to defect.**

**Is this necessarily true in international politics?**

# An Alternative Model: The Stag Hunt

Jack

*Stag*

*Rabbit*

Alice

*Stag*

*Rabbit*

Alice: eat stag Jack: eat stag	Alice: go hungry Jack: eat rabbit
Alice: eat rabbit Jack: go hungry	Alice: eat rabbit Jack: eat rabbit

# The Possibility of Cooperation

- **Prisoners' Dilemma**

- You cooperate → I prefer defect

- You defect → I prefer defect

- **Stag Hunt**

- You cooperate → I prefer cooperate

- You defect → I prefer defect

# Cooperation and the Stag Hunt

**What happens if...**

- Both players are starving?**
- Both like rabbit almost as much as stag?**
- Just one is starving?**
- Just one likes rabbit almost as much as stag?**

# Spirals and the Stag Hunt

**In order to trust you, I can't give you a reason not to trust me.**



# Offense, Defense, and the Security Dilemma

- **Offense-defense balance**
  - **Stag Hunt instead of Prisoners' Dilemma**
  - **Less "hungry" in the Stag Hunt**
- **Offense-defense differentiation**
  - **Less uncertainty in the Stag Hunt**

# Discussion Question

**What important features of international politics do both of these models leave out?**

# For Next Time

- **Finish reading *Essence of Decision***
- **First short paper to be assigned**

# Image Sources

— Stag: David Merrett, via **Flickr**