### Using Exact Sciences Models for Understanding Social Phenomena Session 3 – Social Norms

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# Why are people influenced by their peers?

Awareness Learning Normative Pressure



Normative Pressure - Distress felt when peers whose approval she values are behaving in a way she does not

## **Social Norms**



AN EVOLUTIONARY APPROACH TO NORMS ROBERT AXELROD University of Michigan





## The Burr Hamilton duel, 1804



"..the ability to be useful, whether in resisting mischief or effecting good, in those crises of our public affairs which seem likely to happen, would probably be inseparable from a conformity with public prejudice in this particular"

(Truman, 1884, Field of Honor: A Complete and Comprehensive History of Dueling in All Countries).



#### Definitions

#### Norm

"A norm is any behavioral rule that is considered valid by the majority of a population"

#### **Social Norm**

"A social norm is a rule of conduct derived from a social behavioral expectation"

#### **Moral Norm**

"A moral norm is a rule of conduct derived from a moral value"

#### Legal norm

"A legal norm is a rule of conduct derived from the code of law"

#### Axelrod's definition

A norm exists in a given social setting to the extent that individuals usually act in a certain way and are often punished when seen not to be acting in this way

## Norm acceptance





#### Conformity



#### Asch experiments (Solomon Asch1951)

#### Watch the video



#### Why do people conform?

#### Normative conformity I want to fit in with the group

#### Informational conformity

The group cannot go wrong. They know better than I do

# び What influences conformity?

Group size

Lack of group unanimity

**Difficulty of Answer in** the task **(private**)

# **Modeling social** Ο Norms $\swarrow$ What should we model? $\sum$

## Axelrod's norm game

#### Key:

- i, j individuals
- S probability of a defection being seen by any given individual
- B<sub>i</sub> boldness of i
- V<sub>i</sub> vengefulness of j
- T player's temptation to defect
- H hurt suffered by others
- P cost of being punished
- E enforcement cost



## A dynamic model

Set a strategy – a combination of Boldness: 0-7 /7 Vengefulness: 0-7 /7 For each player

Draw a number 0-1 for S. 4 opportunities to defect Defect if S<B

Determine the score of all participants

Above/below average?



#### **Computing the scores**

## Table 1. Example of Payoffs in the Norms Game Attained by a Player With Boldness Equal to 2/7 and Vengefulness Equal to 4/7

Event	Payoff per Event	Number of Events	Payoff
Defection	T = 3	1	3
Punishment	P = -9	1	9
Hurt by others	H = -1	36	-36
Enforcement cost	E = -2	9	-18
Score			-60



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## What could incentivize people to be vengeful?



"I heard a man right behind me remark of the fire, "Now ain't that a shame?" No sooner had the words left his mouth than someone knocked him down with a pop bottle. He was hit in the mouth and had several teeth broken." (Cantril, 1941, p. 101)



metanorms game



Norms need supporting mechanisms

This is not a pure selforganizing process



Metanorms are an example of such a mechanism



#### Mechanisms to support norms - Dominance

#### 19 August 1981 - Gulf of Sidra incident - Libya

In the first Gall of Schulmsteiner, 19 Report 1991, two Libyen Se-22 Fitter attack alsocial first open and were schereportig shot down by two American F-14 Tanasats of the Libyen cases. (2002): Carrier Maritz is shown while six F-14a Tanasats Ry in Formation over Recorder. The "Tomasts" were from Fighter Spandron 64 (18:36). White Plantage geb Colection



Large number and large economic power can help a dominant group to establish norms.

How to model? Do we still need metanorms?

## Mechanisms to support norms - Internalization

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...A woman must have a thorough knowledge of music, singing, drawing, dancing, and the modern languages....; and besides all this, she must possess a certain something in her air and manner of walking, the tone of her voice, her address and expressions. *Pride and prejudice, Jane Austen* 

How to model? Do we still need metanorms?

# Let's discuss

Is this a correlated behavior? Did we assume connectivity? Flaws of this model? Anyone to fancy a Schelling type model?



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