

# Tipping Models & Informational Cascades

Revision Day

## Overview

- Two issues
- Definitions
- Puzzles & mechanisms
- What's out there
- Evaluation
- Last year's paper

- tipping models: thresholds and informational cascades
- treated separately, although sometimes interlinked

Two Companies

Thresh & Partners



- two companies
- in order

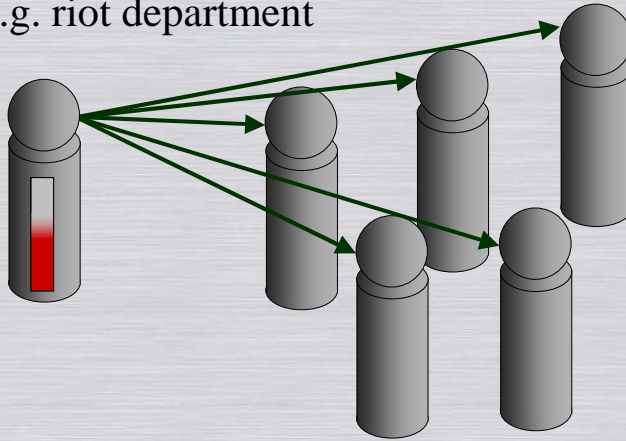
## T&P—The Company

- Deals in collective action
- Sells thresholds
- Tipping subsidiary
- Acts on payoff, not information
- Situation specific

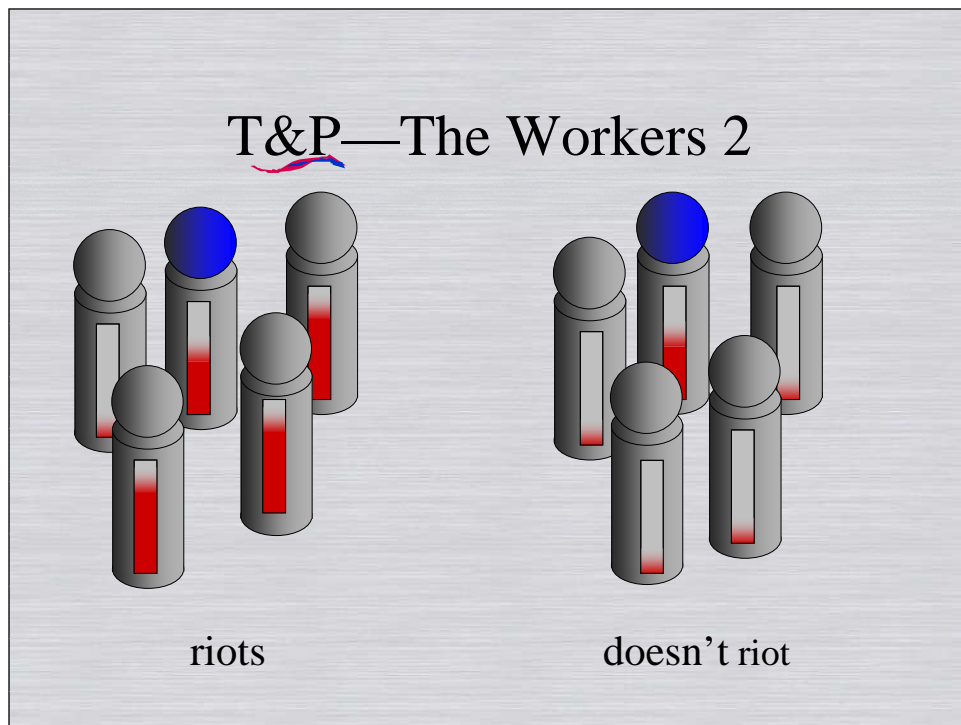
- people in context
- tipping occurs because of thresholds
- changing costs to participate as others do, too
- different thresholds for different issues

## T&P—The Workers 1

e.g. riot department



- individual acts considering what others do
- depending on others, the costs is different
- individual act influences others, too
- dynamic



- situation specificity
- not path dependent as such, but context dependent
- this deals with surprisingly different outcomes with similar groups
- problem that acts may not be public / visible

## T&P—Departments

- Riots
- Strikes
- Migration
- Adoption of innovation
- Protests

- examples
- sometimes spread like wildfire, sometimes nothing happens
- tipping points inherent in the system

## T&P—The Investors

- Psychology Inc.
- Neighbour & Hood Effects
- Imitation Ltd.
- Diffusion of Innovation
- Broken Windows

- psychology: emotional shocks that can change the thresholds
- neighbourhood effects in terms of others around you affect your behaviour; imitation
- adoption of innovation
- criminology: broken window





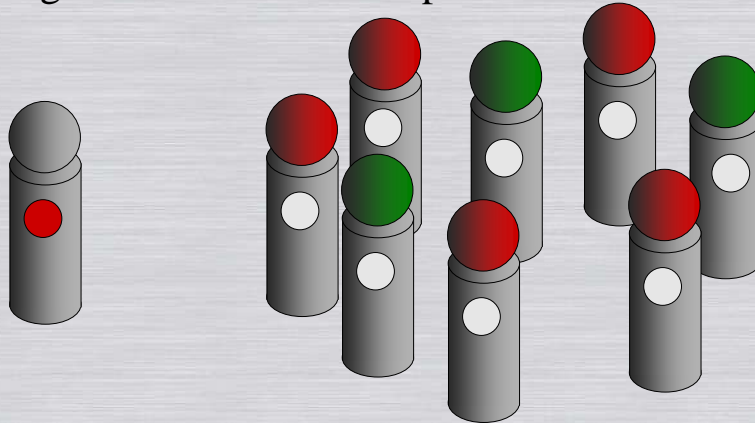
## ICC—The Company

- Deals in collective action
- Sells information
- Tipping subsidiary
- Information inferred from others' actions
- Conformity common
- Fragile business

- again, action in context
- this time information
- information is inferred, thus not necessarily right
- fragile since only one individual acting differently can upset the stable state

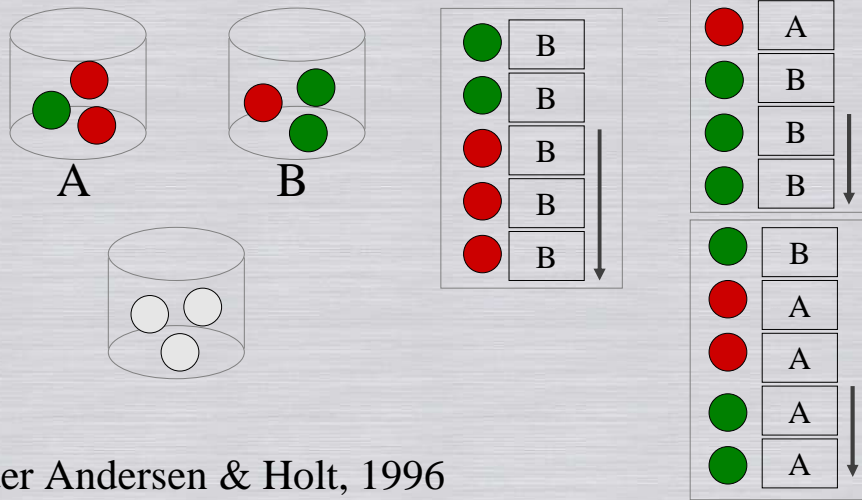
## ICC—The Workers

e.g. human resources department



- private information, public decisions (from which information is inferred)
- everyone in system affected
- assumes an order of decisions (somewhat)
- path dependency
- imitation when information is costly

## ICC—Simple Example



- two cups, different marbles
- private information not enough to be sure, use predictions of others to infer their information
- cascades are stable, private information doesn't matter any more
- fragile



## ICC—Departments

- Job applications
- Journal articles
- Fashion
- Culture / norms / customs

- examples
- sometimes stable for long time
- opinion leaders who value own (private) information more
- cost of not going along
- Nash equilibrium may be Pareto suboptimal (e.g. language change in Ghana)

## ICC—The Investors

- Neighbour & Hood Effects
- Diffusion of Innovation
- Opinion Leader Corp.
- Game Theory Bros.
- Herding & Behaviour
- Imitation Ltd.

- again, act depending on what others do
- diffusion of innovation, e.g. if not sure if new product better
- upset by new information, new agents, know if in cascade (change how much value information of others)
- imitation and herding behaviour

## Investor's Guide

- ✓ Explain strange outcomes
- ✓ Social (imitation)
- ✓ Sudden changes
- ✓ Path dependency
- ✗ Complete information
- ✗ Measuring thresholds
- ✗ Cannot predict

- strengths and weaknesses as such
- not complete
- powerful, but cannot stand alone
- owes much to game theory and assumptions of how actors act (rationality)
- mistakes, misjudging the situation (etc.) not considered

## Case Study

*“What kind of mechanisms can account for sudden changes in patterns of collective action?”*

Which contractor?

- last year's question
- which company should deal with this business deal?

## Battle Plan

- Delimit
- Define
- Answer
- Illustrate
- Summarize

- basic plot
- good for any answer, in my opinion
- details follow



## Case Study—Delimit

- Focus on tipping
- Outline alternatives
- Not forget
- Weaknesses

- because we cannot write everything we know
- show that understand the question (also: signal to examiner)
- make sure we answer the question (most common problem)
- quash diversions before they develop

## Case Study—Define

- Collective action
- Tipping model
- Thresholds
- Cascades
- Nash equilibrium

- there are different ways to approach many issues, so define to make clear
- gives a sense of direction, since highlights anticipated
- show that we know what we're talking about
- simple, and geared towards this question

## Case Study—Answer

- Sanctions, payoffs
- Thresholds: how, why, (illustrate)
- Collapsing cascades: how, why, (illustrate)

- contrast with other attempts to explain these phenomena
- explain how tipping models work
- mention weaknesses
- say why better
- include illustrations to make easier to understand
- always answer the question

## Case Study—Illustrate

- Fashion (C)
- Riots (T)
- Migration (T)
- Culture (C)

- relevant (say so)
- easy to follow
- show how links to what was said
- don't let illustrations take over or sidetrack

## Case Study—Summarize

- Alternatives
- Threshold
- Cascades
- Measuring?
- Hindsight

- bring everything together
- revisit the main points (highlights)
- refer back to the actual question and answer it head on (general)
- answer the question, but no need for a cure

## Question Time



- time for questions
- handout with generic definitions
- simplistic summaries of some of the set articles
- again, how I would tackle the question