

The Wisdom of Crowds

J. L. Sloan

2005-02-14

The Wisdom of Crowds

- James Surowiecki
- Doubleday, 2004
- New Yorker staff writer
- Motley Fool columnist

“In crowds it is stupidity and not mother-wit
that is accumulated.”

Gustave Le Bon/1895

- Francis Galton/1906 County Fair
 - Ox weight: N=787 1197 vs. 1198 pounds
- Hazel Knight/Columbia 1920s
 - Room Temperature: within 1°F
- “Who wants to be a millionaire?”
 - Experts: 65% vs. Audience average: 91%
- Kate Gordon/Sociologist
 - Weight Rank: N=200 mean 94% accurate > 5
- Jack Treynor/Finance Professor
 - 850 Jelly Beans: N=56 871 mean > 1

Errors Average Out

- USS Scorpion
 - Sank in 1968
 - Fix within 20 miles
 - Depth 1000s of feet
 - John Craven/USN
 - Averaged guesses of many experts/fields
 - Submarine found within 220 yards of average
 - No one expert even close

Self Organizing Behavior

- Commuting to work
 - Very little communication required
- Flocks of Starlings
 - Just a few simple rules: complex behavior
- William White/1969
 - “Street Life Project”: NYC pedestrians
- Brian Arthur/Bell and Sethares
 - “El Farol Problem”: 60% occupancy

Tacit Knowledge

- Thomas Shelling
 - How to meet in NYC on a certain day
- Ultimatum Game
 - Proposer splits \$10 with Responder
- Public Goods Game
 - Consenters vs. Rationals vs. Altruists
- Pro-Social Behavior
 - Relationship Durability: “Shadow o/t Future”

Exploiting the Wisdom

- Challenger Disaster
 - Launch decision centralized
 - Contractors
 - Rockwell: liquid fuel engines
 - Lockheed: ground support
 - Martin Marietta: fuel tanks
 - Morton Thiokol: solid fuel boosters
 - T+21 minutes trading of Morton Thiokol halted

Exploiting the Wisdom

- Iowa Electronic Markets: elections
 - Outperforms polls
 - Within 1.37% of 2000 presidential election
- Hollywood Stock Exchange: movies
 - Best predictor of first weekend box office
 - 2002: 35/40 nominees, 6/6 major categories
- H-P: printer sales
 - Outperformed market management

Exploiting the Wisdom

- DARPA FutureMap
 - Policy Analysis Market
 - “Betting on catastrophes”
 - Just like insurance companies
 - Continuing with “private funding”

Common Elements

- Diversity of Opinion/Information Cascade
 - Specialization increases diversity
 - Non-experts reduce redundant information
 - One minority opinion improves rigor, nuance
 - **The Tipping Point** by Malcolm Gladwell
- Independence of Thought/Group Think
 - Bay of Pigs
- Decentralization/Centralized Control
 - U.S. vs. Soviet military doctrine

Failures to Exploit

- Pay based not on performance
 - But performance relative to expectations
- “Better for reputation to fail conventionally than to succeed unconventionally”
- Group Polarization
- Social Comparison
- **Inviting Disaster** by James Chiles