INFORMATION TECHNOLOGY AND MARKET DISEQUILIBRIUM

Robert Bloomfield
Cornell University/
Columbia University

Introduction

The World is Changing

IBM's *Watson* Plays Jeopardy…

HIS WITS & EXPERIENCE MAKE FOR A HARD KEYNOTE TO FOLLOW

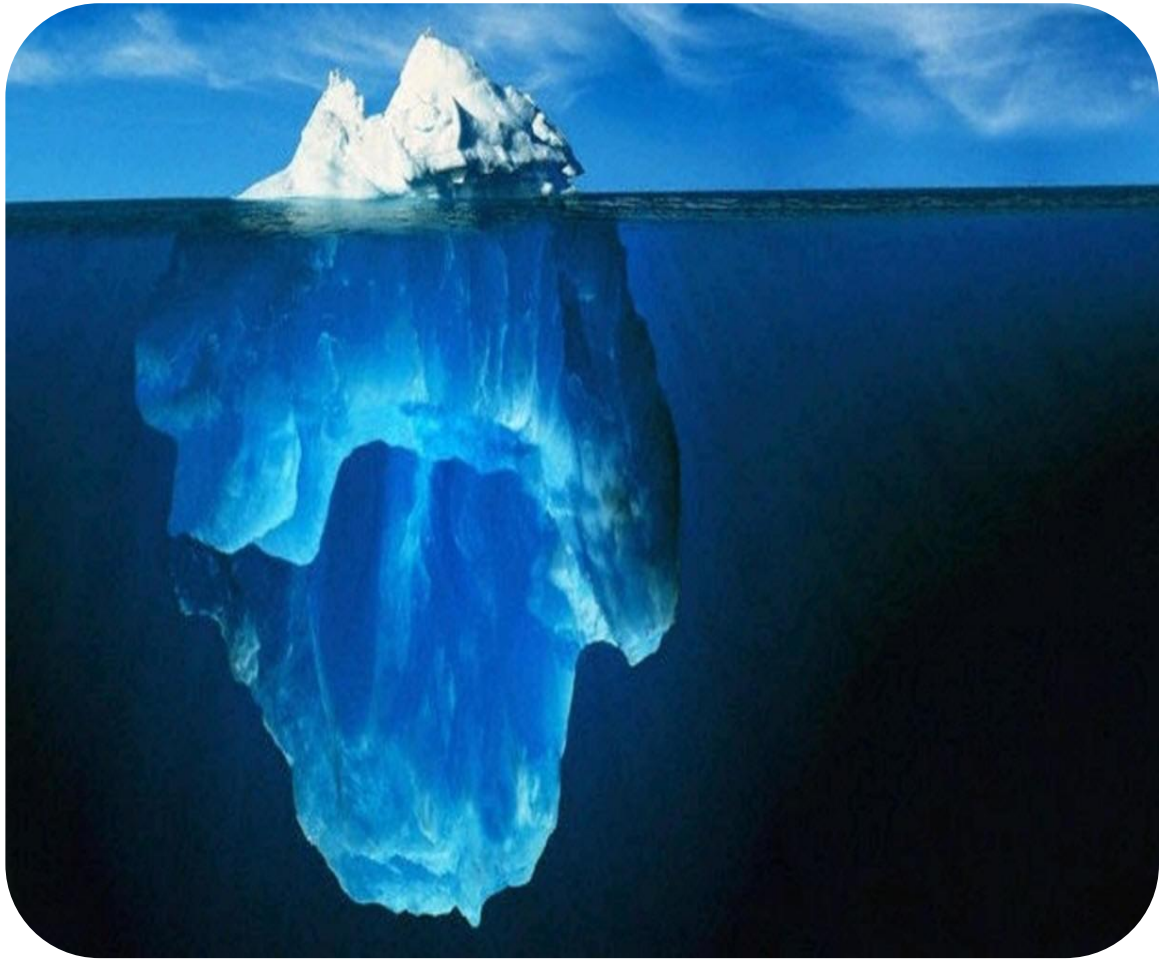
… and diagnoses better than doctors

- (Doctors disagree)

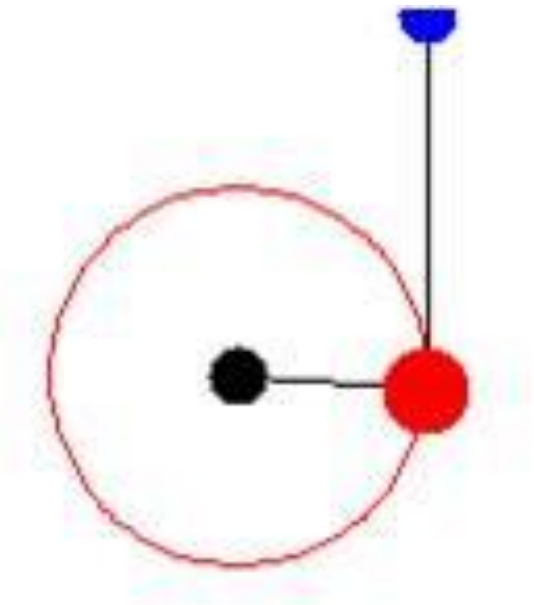
We're Next!

Predictions

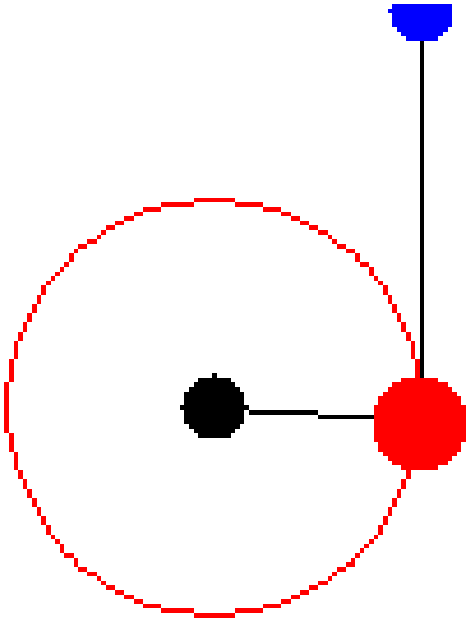
The Academic's Disadvantage



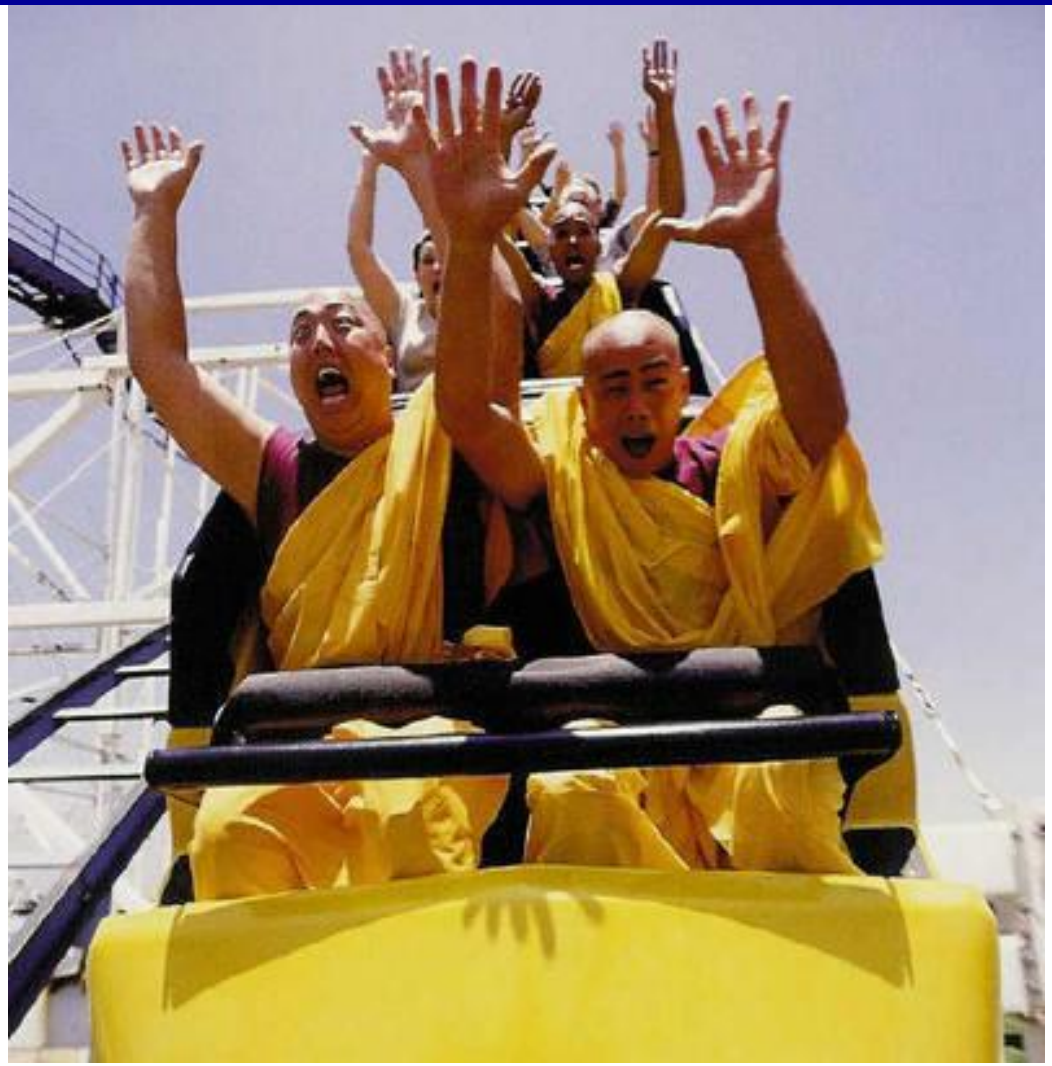
Disequilibrium Analysis



Disequilibrium Analysis



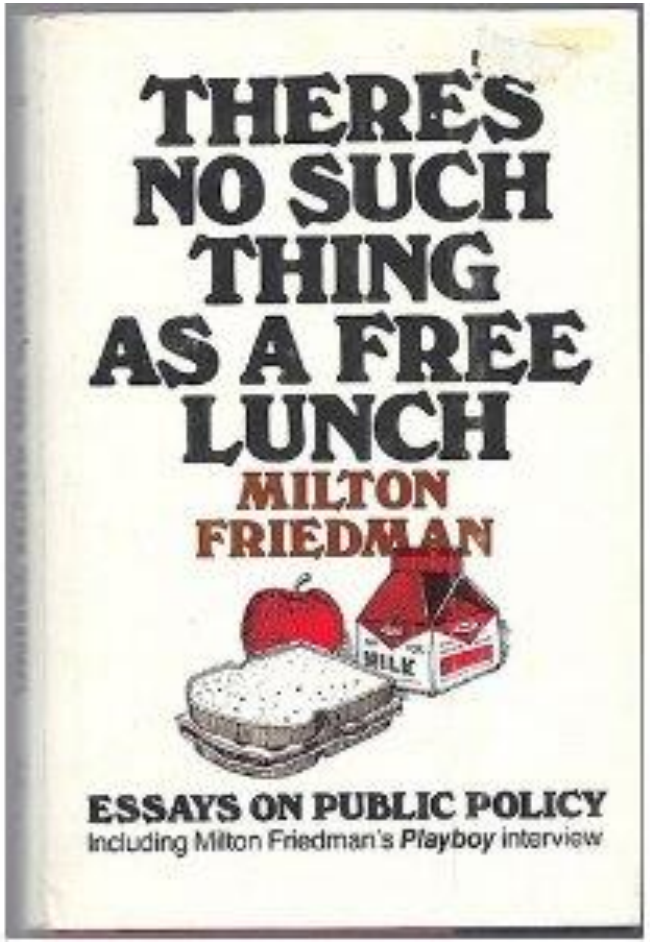
1. It's going to be a wild ride



The Problem with “Be Here Now”

2. We might paint ourselves into a corner

Some (Evolutionary Game) Theory


THERE'S NO SUCH THING AS A FREE LUNCH
MILTON FRIEDMAN
MILK
ESSAYS ON PUBLIC POLICY
Including Milton Friedman's Playboy interview

Of *course* there's a free lunch!

The Point

- The only reason an economist can assume there's no free lunch is because everyone in the economy is sniffing out every free lunch they can!

Requirements for Equilibration—and Why Technology Matters

- Stationary environment
- Reasonable learning processes lead to equilibrium
- Minimal triggering of behavioral forces

- Technology changes rapidly, as does what we do with it
- Quicker adjustment *impedes* equilibration
- Technology exposes strong behavioral forces

Applications

Applications

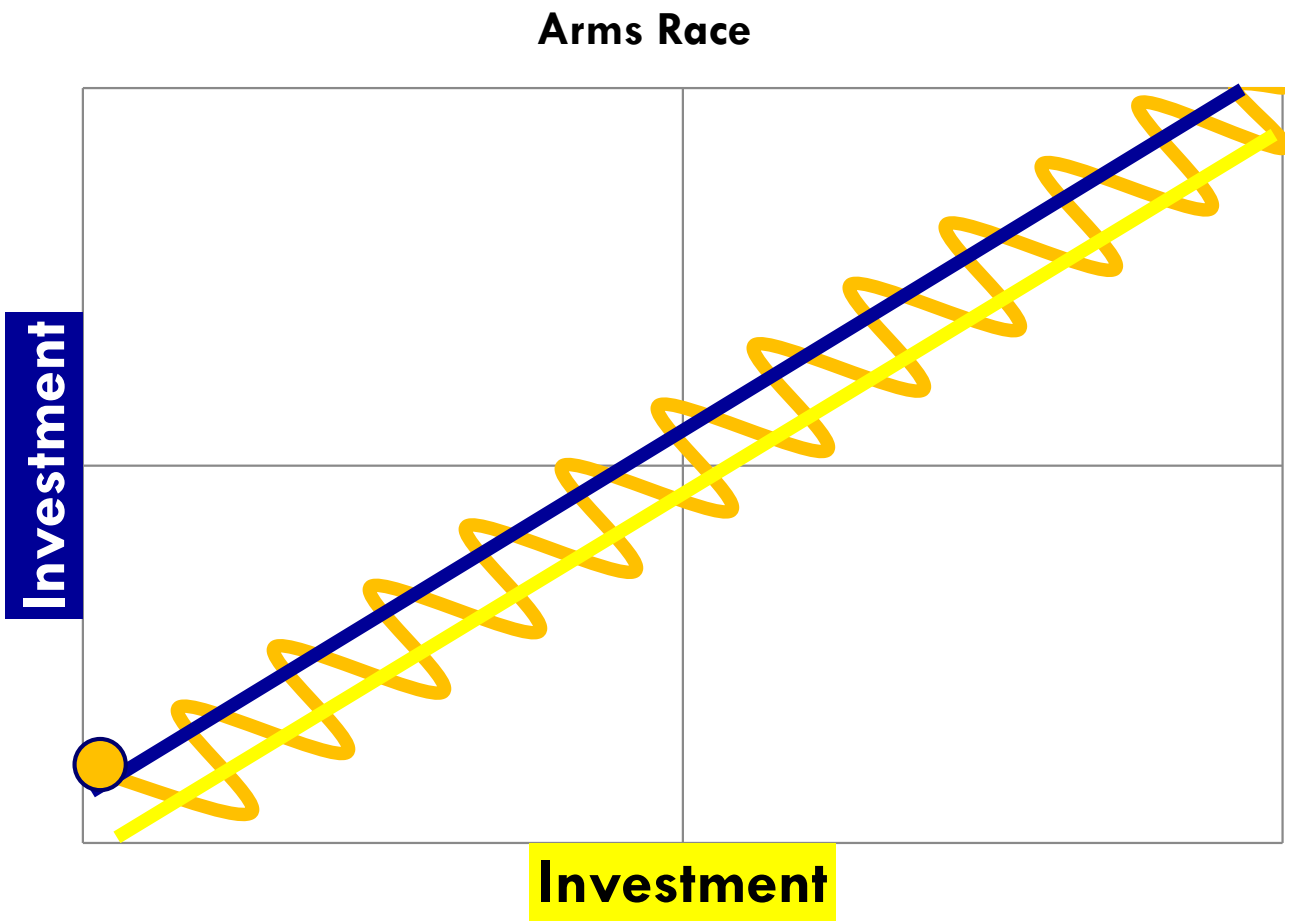
Monitoring

Monitoring is an Arms Race

Do you know your enemy?

The Arms Race

The Arms Race



Michigan over Syracuse by 9

Campbell's Law & Measure Management

- "The more any quantitative social indicator is used for social decision-making, the more subject it will be to corruption pressures and the more apt it will be to distort and corrupt the social processes it is intended to monitor."
  - Donald T. Campbell

- **Measure:** an observable variable intended to capture the construct
- **Construct:** the underlying element of performance we care about

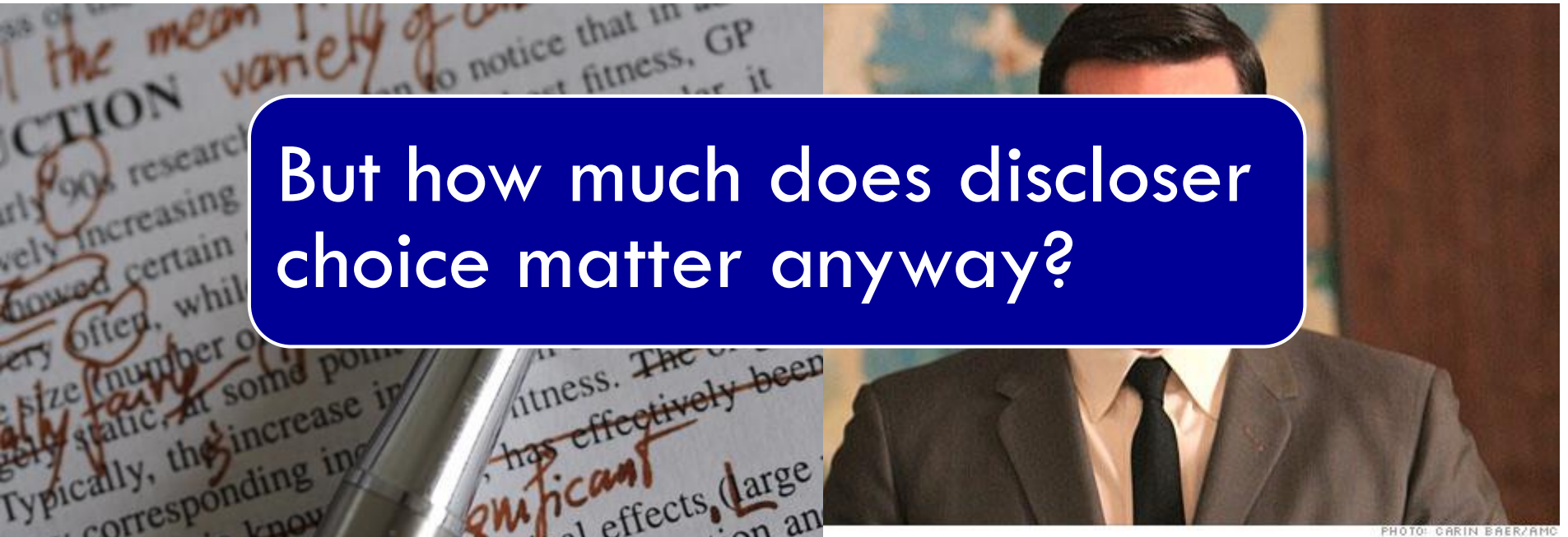
How Corruptible are Big-Data Measures?

Change is Easy

- Writing Styles
- XBRL tags

Change is Hard

- Speaking styles
- Voice & Bone structure



Hide and Seek

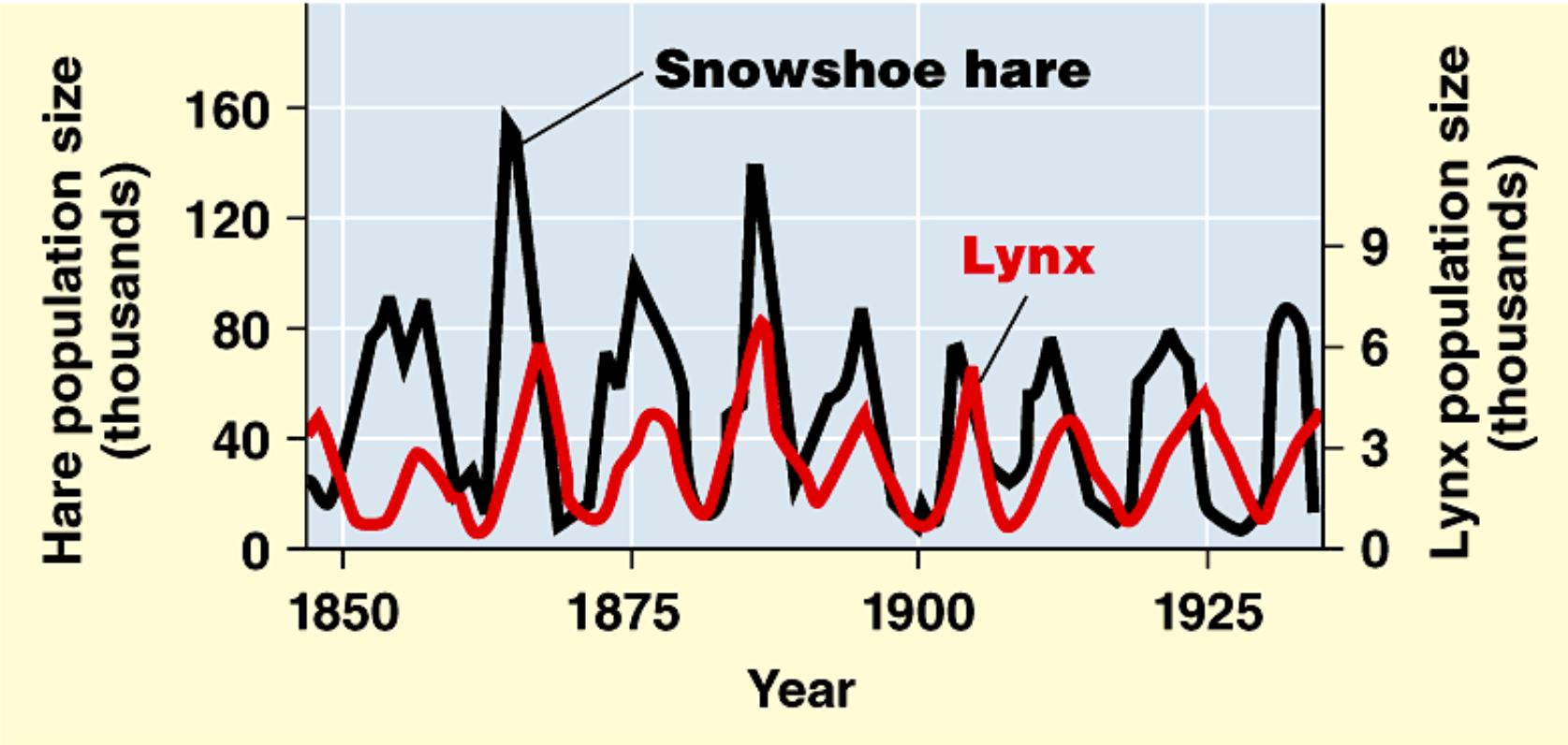
Pre-technology

- **Face of Financial Statements**
- **Footnotes**

Today

- **Machine Readable**
- **Not Machine Readable**

Predator-Prey Cycles



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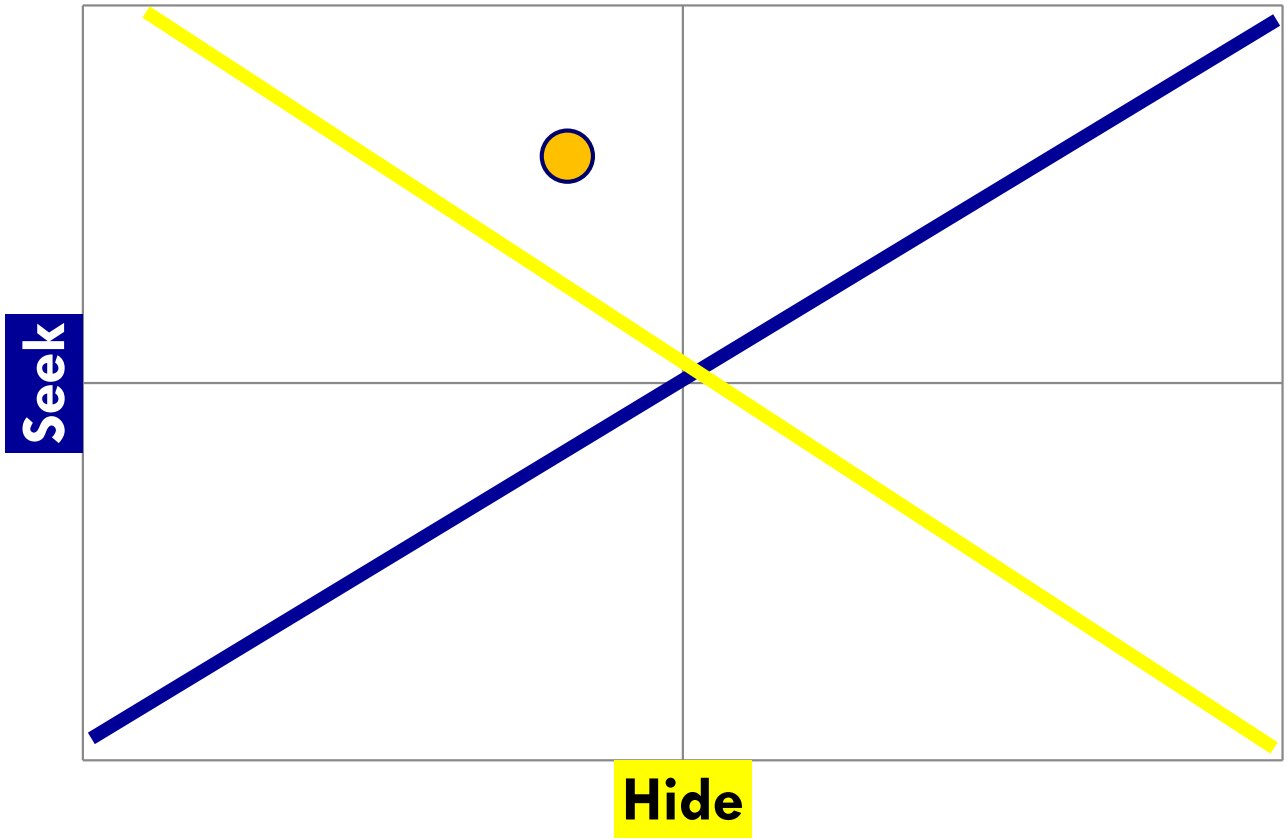
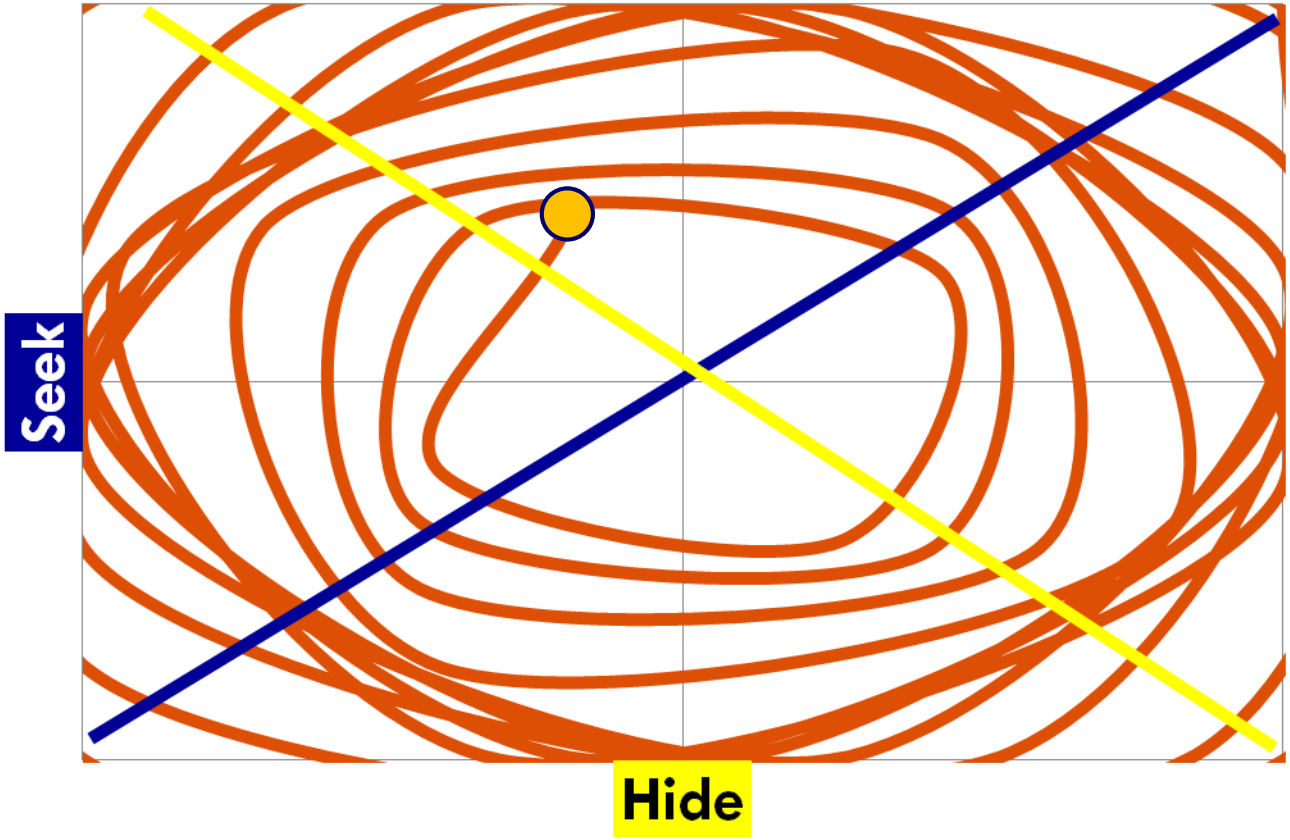
Predator-Prey



Predator-Prey

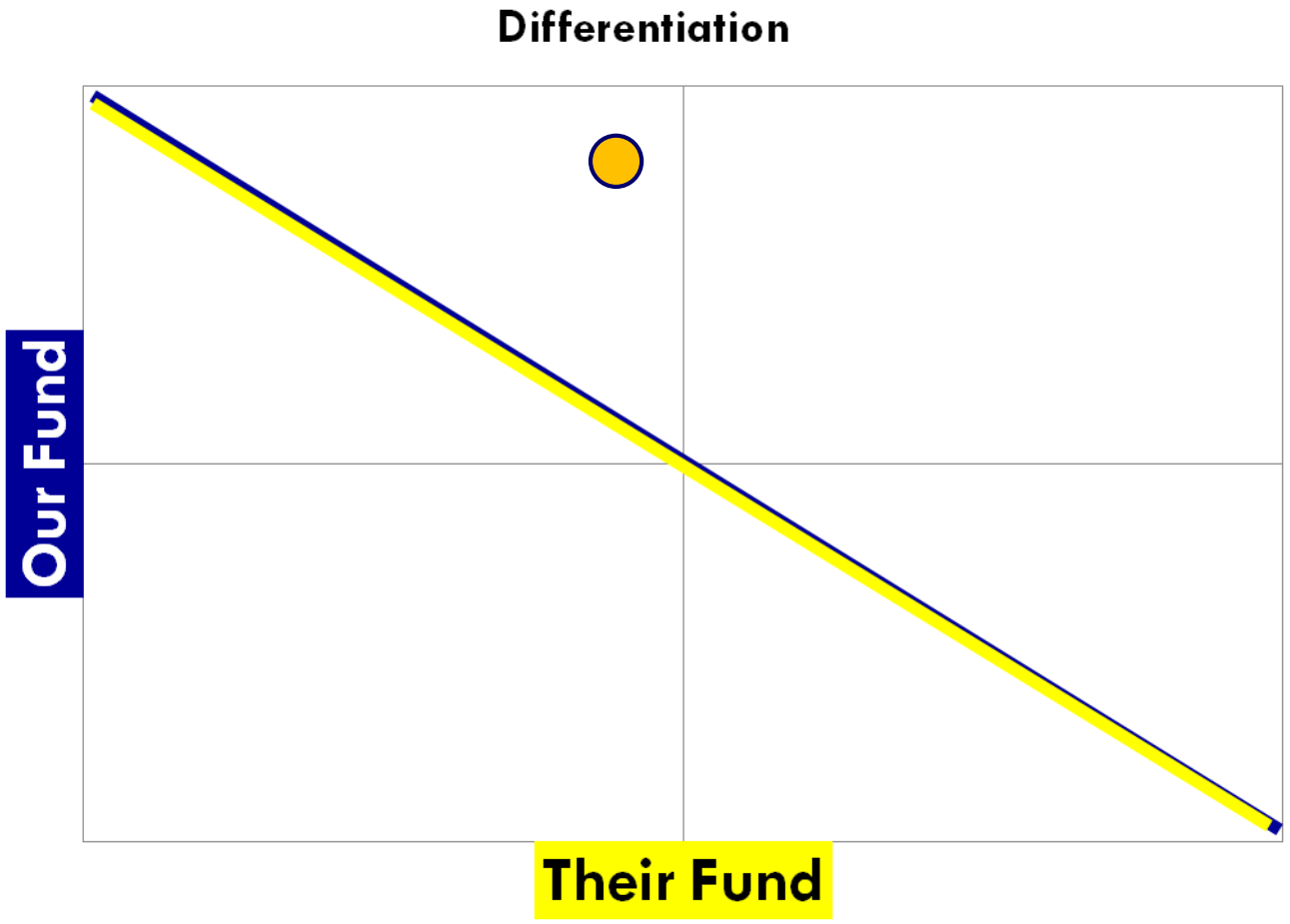


Applications

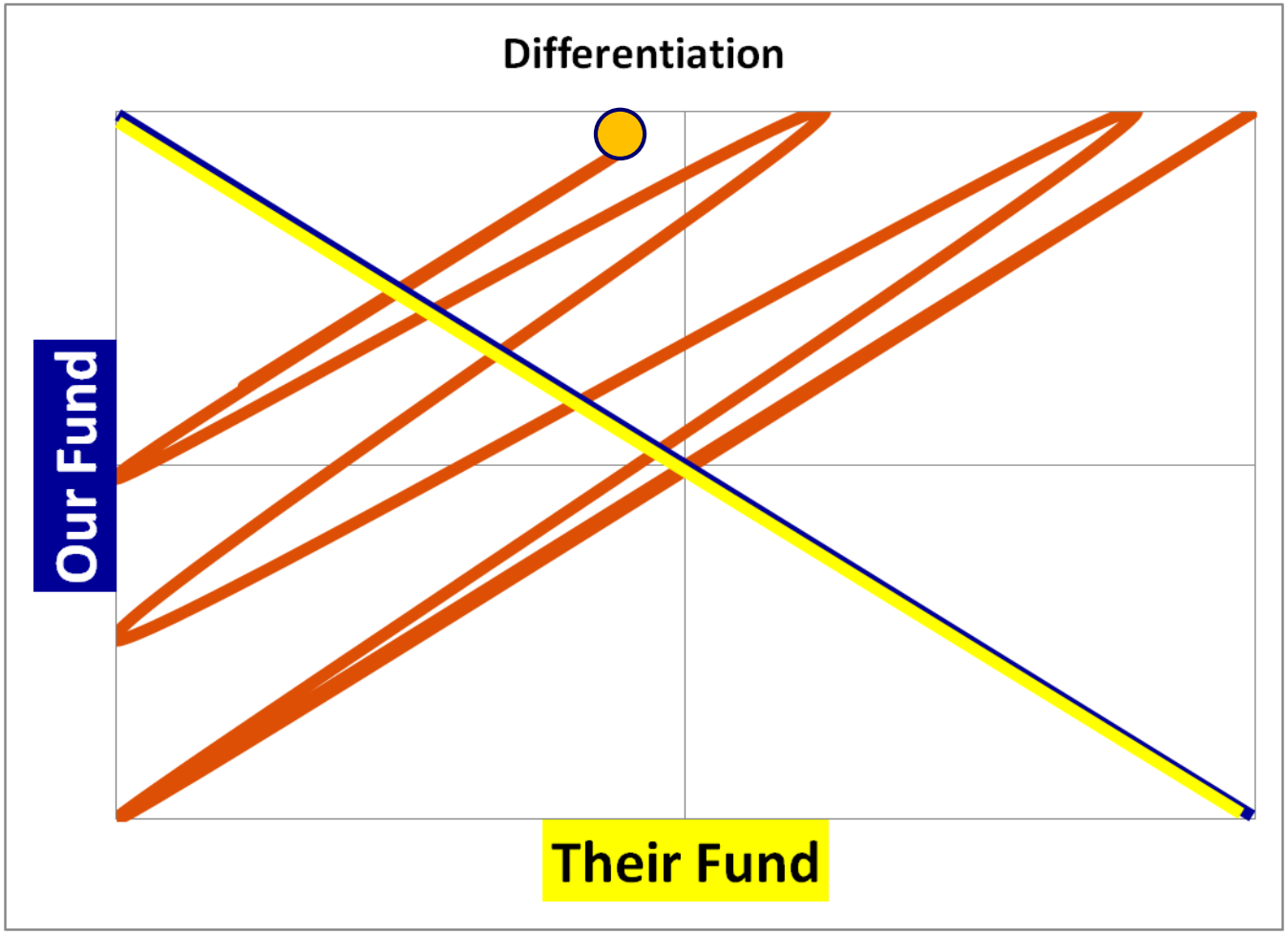
Investment Strategy

Differentiation

The Differentiation Game



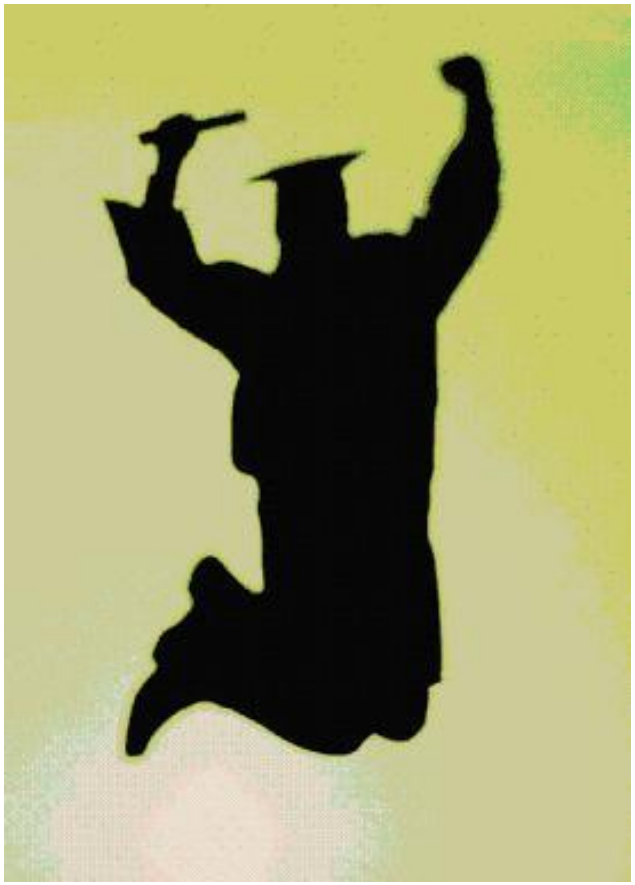
The Differentiation Game



Capacity and Exploitation

Photo 1: Assembly line

Photo 2: Wheel department



Technology Lowers Adjustment Costs

Edgeworth Cycles

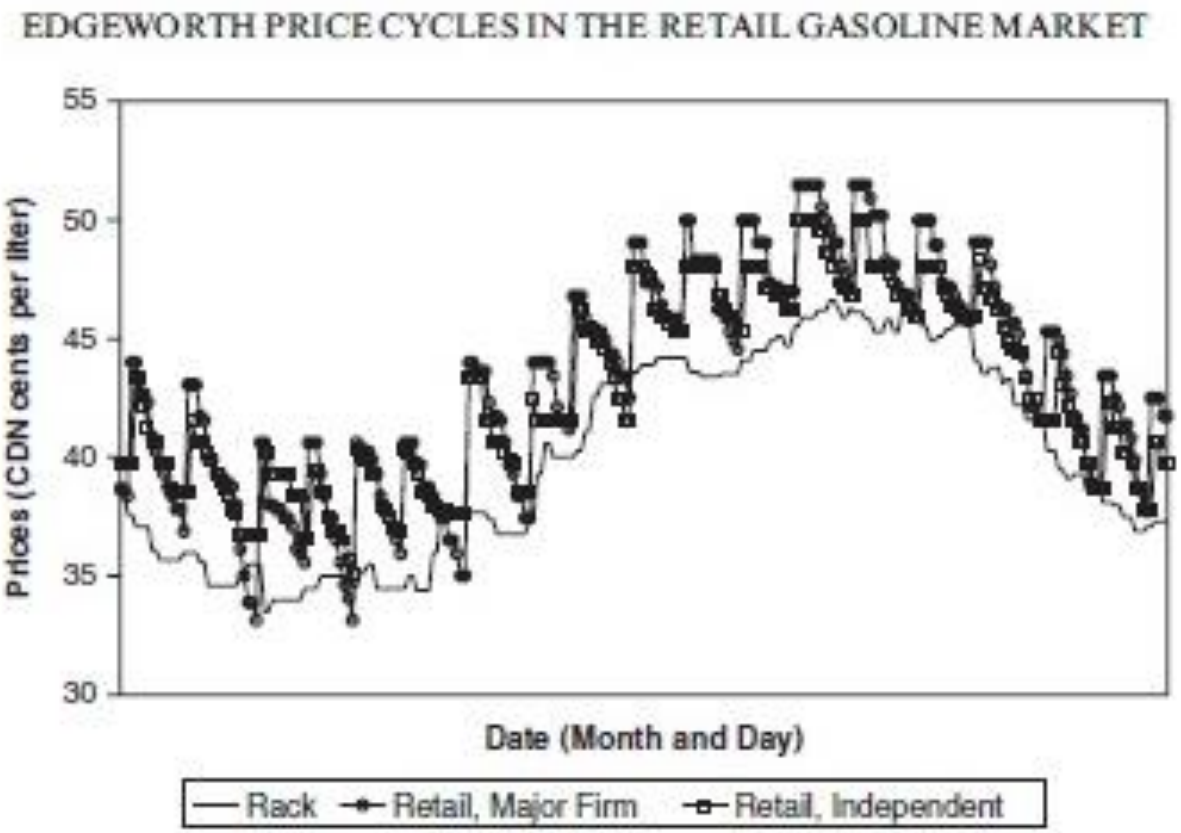


Figure 1
Retail Prices (Major Firm, Independent Firm) and Rack Price

Applications

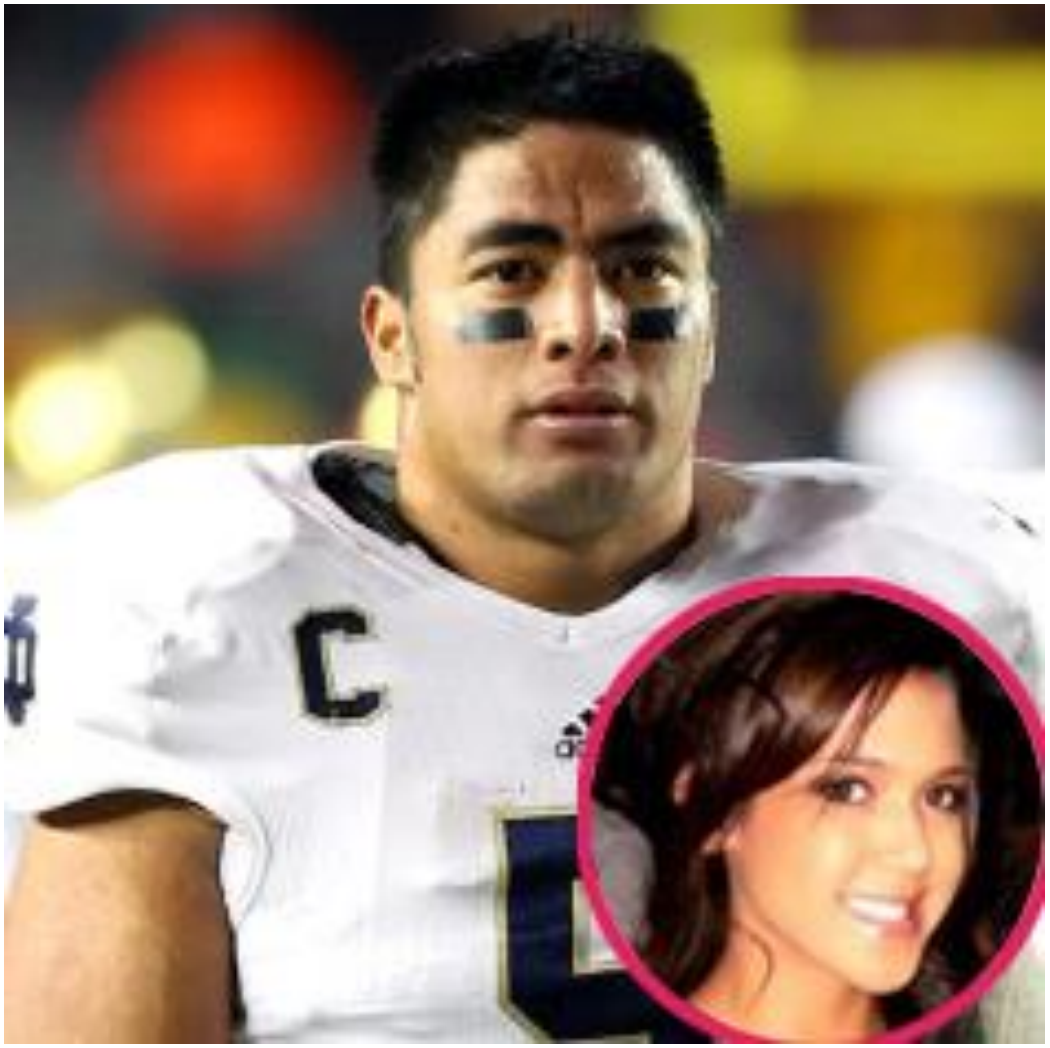
Persistent Bias

Bias: the dark side of heuristics

Heuristics are adaptive rules of thumb that help us make good decisions *most* of the time

We are better off with them than without them—as long as circumstances don't change too rapidly

Miscalibration



Affinity Fraud

Do you know what is audited?

The Winner's Curse

“Expert” Probability Matching

Experts just cant help themselves—they have to tweak the models, to their detriment.

- An image indicates a 4% chance of cancer
- What % of the time should you proceed to an invasive biopsy?

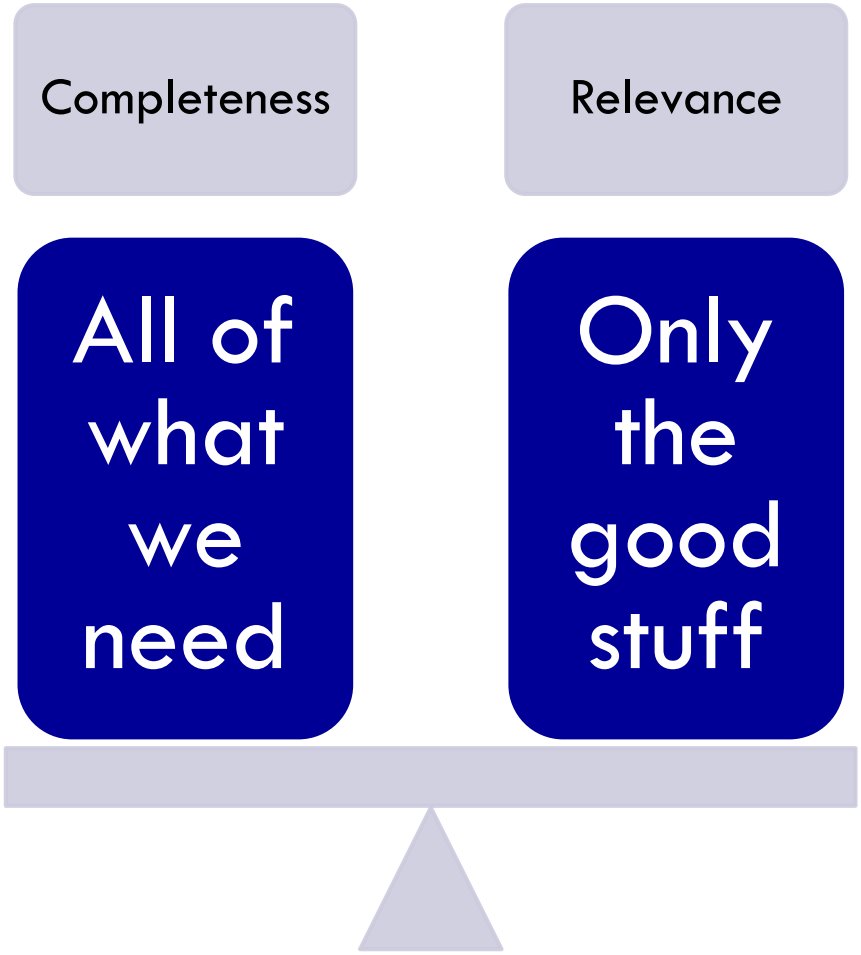
Can he avoid micromanaging?

We might paint ourselves into a corner

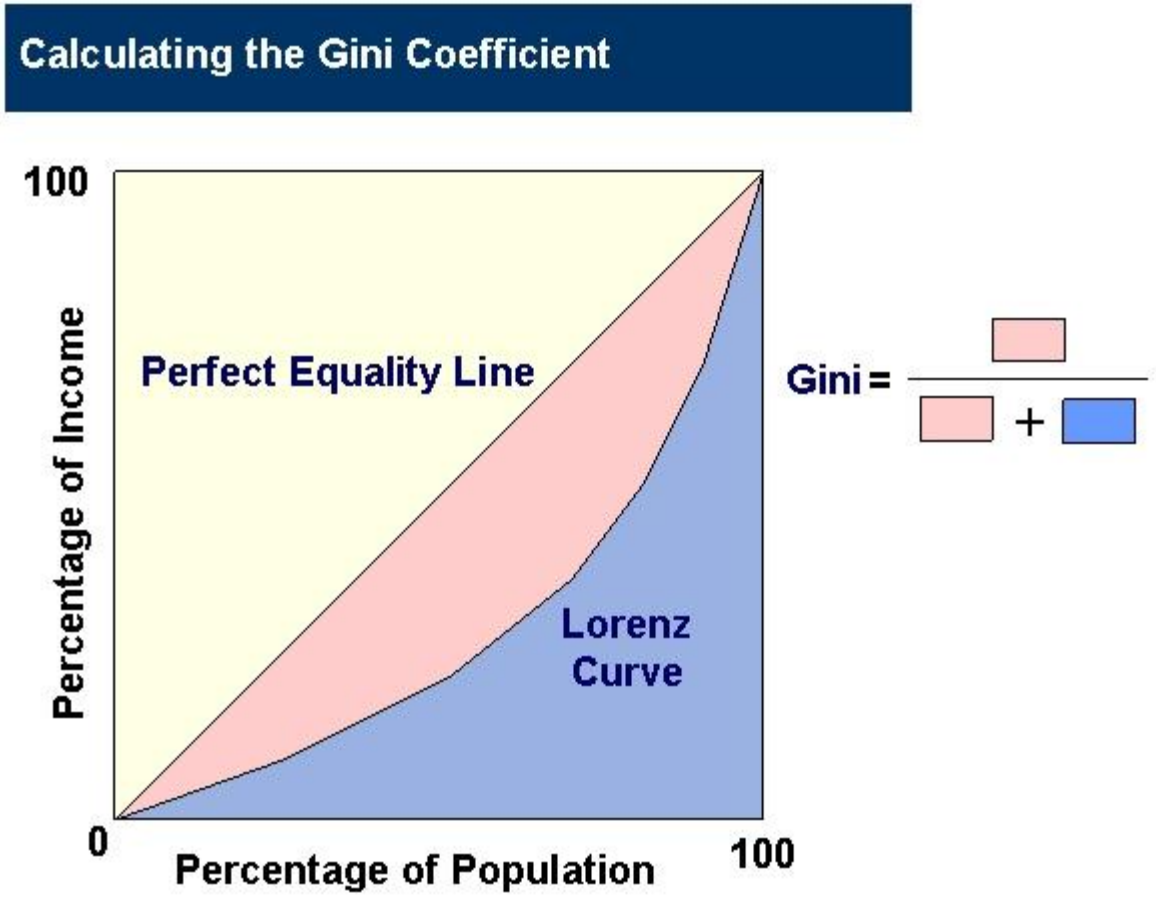
Multiple Equilibria & XBRL

The Value of Protocols

Pragmatics


Completeness
Relevance
All of what we need
Only the good stuff

Inevitable Equilibria?



Conclusion