



# Data as a disruptive force

*Threats and opportunities for the insurance industry*

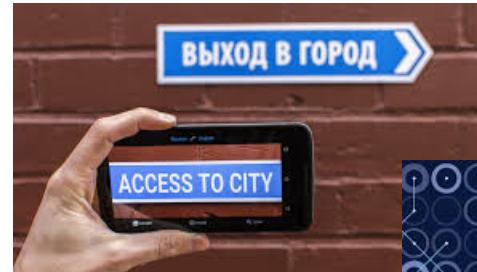
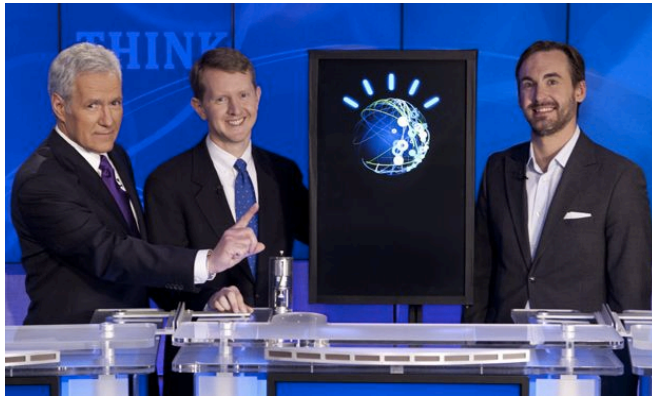
CAS Spring Meeting  
Seattle  
May 16, 2016

James Guszczka, PhD, FCAS  
Deloitte Consulting  
[jguszczka@deloitte.com](mailto:jguszczka@deloitte.com)

# Data as a disruptor

## Threats

# Big data, the IoT, and the renaissance of AI



Narrative Science™

## Computer paints 'new Rembrandt' after old works analysis

By Chris Baranluk  
Technology reporter

6 April 2016 | Technology



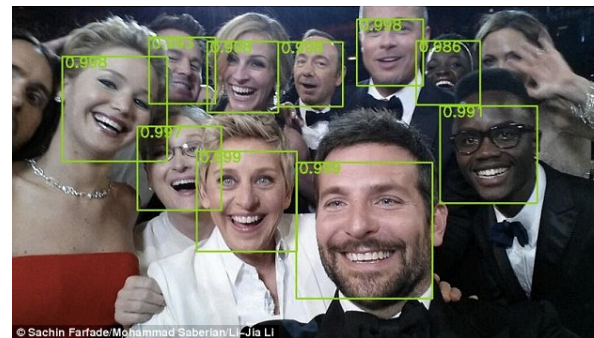
## A Trip in a Self-Driving Car Now Seems Routine

By JOHN MARKOFF MAY 13, 2014 8:08 PM 54 Comments



During a demonstration Tuesday of one of Google's self-driving cars, a noticeable behavioral quirk that the Lexus exhibited was that it seemed to change lanes with emphasis, avoiding the gradual meandering from one lane to the next as a human driver might do. Jason Henry for The New York Times

MOUNTAIN VIEW, Calif. — Boring.  
That's the best way to sum up my second ride in a Google self-driving car, on Tuesday.



© Sachin Farfode/Mohammad Saberian/Li-Jia LI



The painting was produced by a computer that had analysed existing Rembrandt works  
A team of technologists working with Microsoft and others have produced a 3D-printed painting in the style of Dutch master Rembrandt.

# An early example of big data and AI

## CREDIT SCORE FACTORS



- On-time payments
- Capacity used
- Length of credit history
- Types of credit used
- Past credit applications

(This we know)

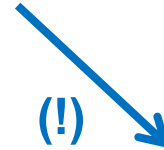


# A more striking correlation

## CREDIT SCORE FACTORS



- On-time payments
- Capacity used
- Length of credit history
- Types of credit used
- Past credit applications



# More food for thought

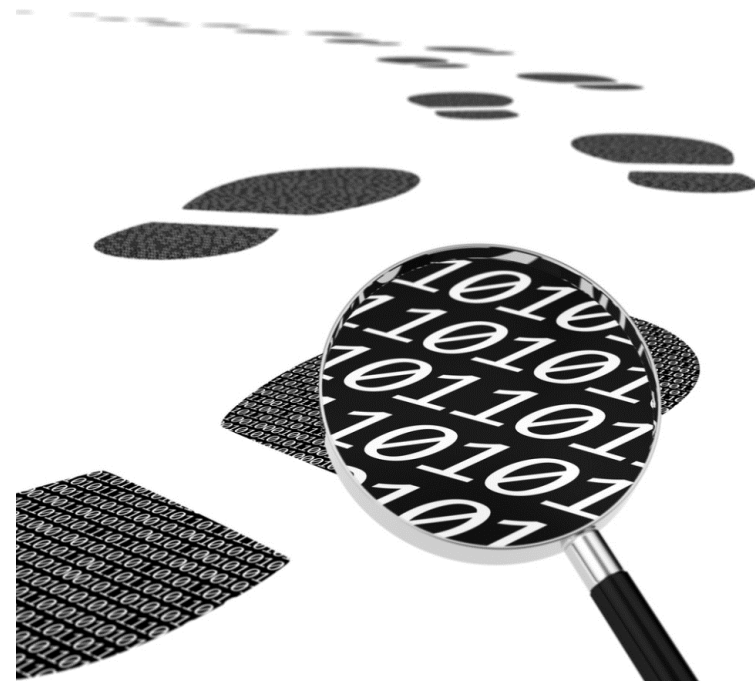


# The internet of things includes people

Our lives are digitally mediated.

We continually leave behind digital breadcrumbs about:

- How we drive
- Who we know
- What we buy
- What we eat
- How we exercise
- How we sleep
- What we watch
- What we read
- What we opine
- Where we travel
- How we socialize
- How we surf the web
- ...



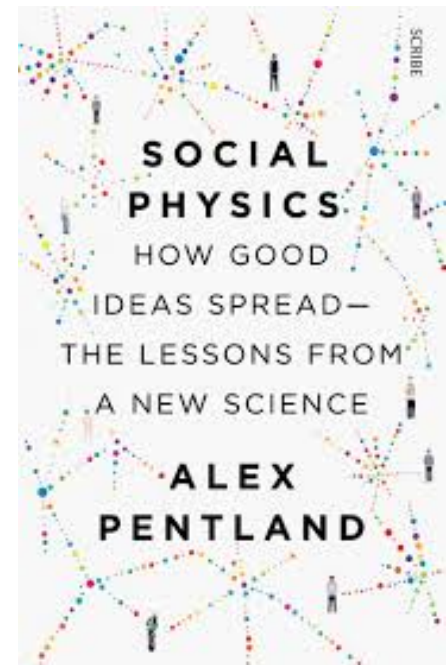
IoT's about us: Emerging forms of innovation in the Internet of Things  
Deloitte Review Issue 17

# Why big data is a big deal

“I believe that the power of Big Data is that it is information about people's behavior instead of information about their beliefs... It's not about the things you post [online] ... which is what most people think about, and it's not data from internal company processes and RFIDs. This sort of Big Data comes from things like location data off of your cell phone or credit card, it's the little **data breadcrumbs** that you leave behind you as you move around in the world.

...those breadcrumbs tell... the story of your life... Big data is increasingly about real behavior, and by analyzing this sort of data, scientists can tell an enormous amount about you. They can tell whether you are the sort of person who will pay back loans. They can tell you if you're likely to get diabetes”

—Sandy Pentland, MIT Media Lab  
“Reinventing Society in the Wake of Big Data”  
edge.org conversation





# An uber-implication for insurers

ft.com > companies > financials >

## Insurance

Home UK World Companies Markets Global Economy Lex Comme  
Energy Financials Health Industrials Luxury 360 Media Retail & Consumer Tech

June 30, 2015 12:31 am

### Insurers in danger of being ‘Uber-ised’, Lloyd’s chief warns

Alistair Gray, Insurance Correspondent

Share Author alerts Print Clip



She joins a growing chorus of insurance executives concerned about disruption. Last month the chief executive of [Generali](#), Europe’s third-largest insurer by premiums, said insurance companies “will disappear” unless they embrace the changes.

Insurers are gathering more data about their customers, by monitoring driving habits through recorders in cars and assessing exercise habits with wearable devices. They are seeking to predict whether policyholders will make claims.

However, executives are increasingly anxious they could be usurped by companies in other sectors — from supermarkets to social media networks — that have larger customer databases they could deploy to provide insurance.

# The promise of big data leaking away?

- 2010: WikiLeaks uploaded Afghan war diary
- 2013: Edward Snowden leak; Target banking data stolen in cyber attack
- 2014: iCloud photo hack
- 2015: Ashley Madison leak

September 1, 2015 6:22 pm

## Do not let fear kill the promise of Big Data

Maurice Lévy

Share Author alerts Print Clip Comments

Privacy is at the heart of democratic modernity and it must be preserved, writes Maurice Lévy



The questions raised by Big Data are of urgent importance to everyone. Privacy is at the heart of democratic modernity, and it must be preserved. The manipulation of the information we share with organisations online, increasingly extensive and sensitive in nature, makes digital processes a question of life (private life, certainly) and, potentially, death .

Digital giants should take a self-regulatory approach — in terms, for example, of security, destruction and anonymisation of data. Their best practices would soon be adopted by every other keeper of digital information. The UK advertising industry's voluntary code of good practice, which has struck a balance between regulation and innovation for decades, might serve as a model.

# Data as a disruptor

## Opportunities

# CRITICAL QUESTIONS FOR BIG DATA

danah boyd <sup>a</sup> & Kate Crawford <sup>b</sup>

<sup>a</sup> Microsoft Research , One Memorial Drive ,  
Cambridge , MA , 02142 , USA

<sup>b</sup> Microsoft Research , One Memorial Drive ,  
Cambridge , MA , 02142 , USA E-mail:  
Published online: 10 May 2012.

*Will large-scale search data help us create better tools, services, and public goods? Or will it usher in a new wave of privacy incursions and invasive marketing?*

# People-centricity

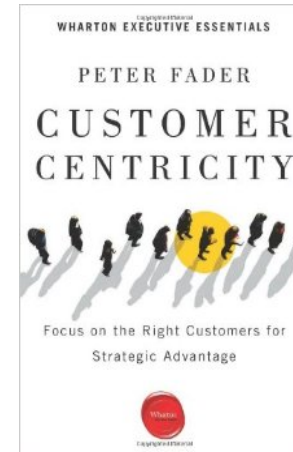
“There needs to be a completely new approach to how we operate as business leaders, one that clearly puts **people at the centre** of all we do.”

-- **B Team Leadership Statement**

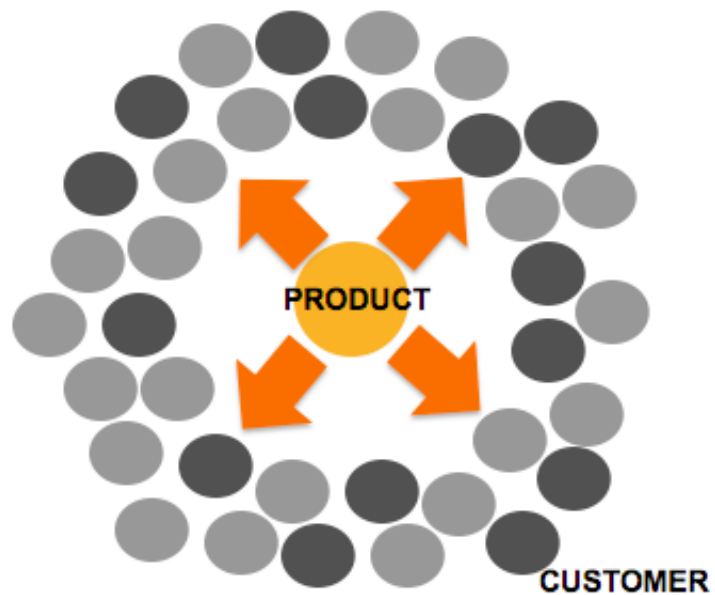
Davos, January 22, 2014



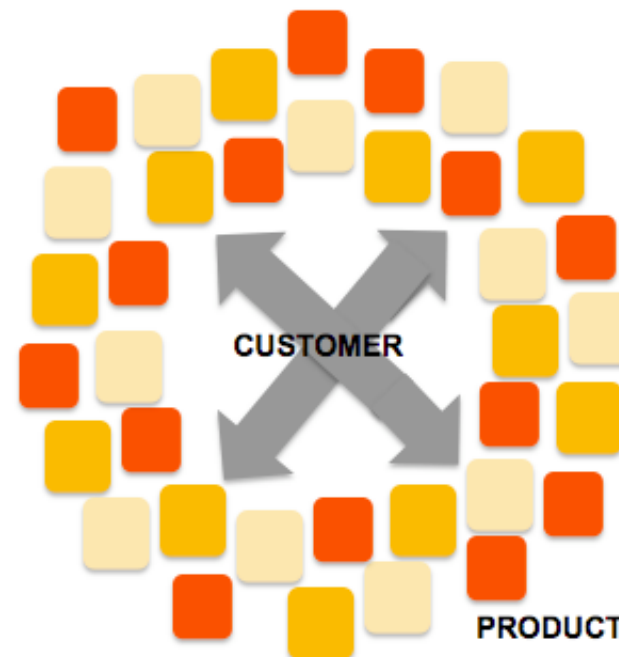
# People-centricity



**Product-Centric:**  
Push products to  
customers



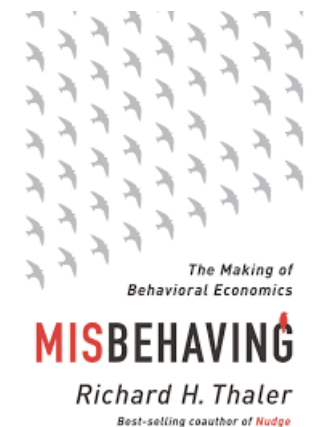
**Customer Centric:** help  
customers find products,  
people, and places



# Econs

Economists assume that the people they study, so called homo economicus, or what I call Econs, are really smart. They know as much economics as the best economist. They make perfect forecasts, have no self-control problems and are complete jerks. They'll steal your money if they can and get away with it.

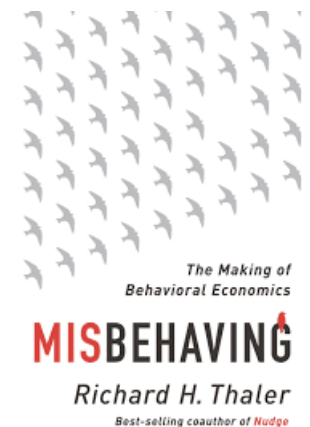
— Richard Thaler



# Humans

Most of the people I meet don't have any of those qualities. They have trouble balancing their checkbook without a spreadsheet. They eat too much and save too little... They'll leave a tip at a restaurant even if they don't plan to go back.

— Richard Thaler





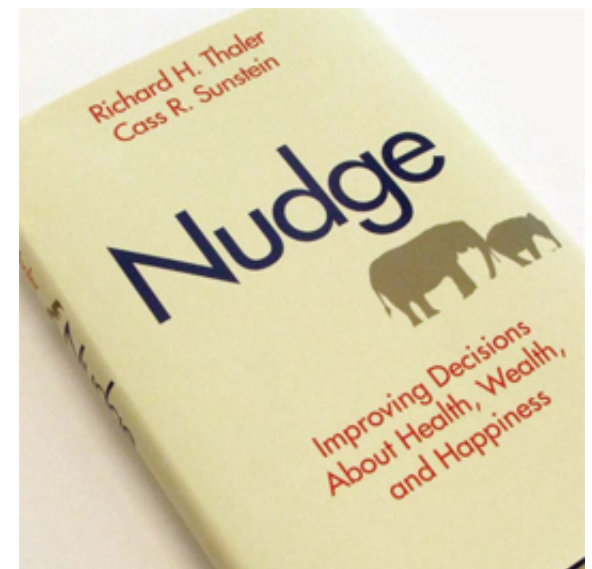
# An overdue science: choice architecture

“Decision makers do not make choices in a vacuum. They make them in an environment where many features, noticed and unnoticed, can influence their decisions. The person who creates that environment is, in our terminology, a choice architect...”



Choice architecture can be used to help nudge people to make better choices (as judged by themselves) without forcing certain outcomes upon anyone.”

— Thaler and Sunstein, “Choice Architecture”



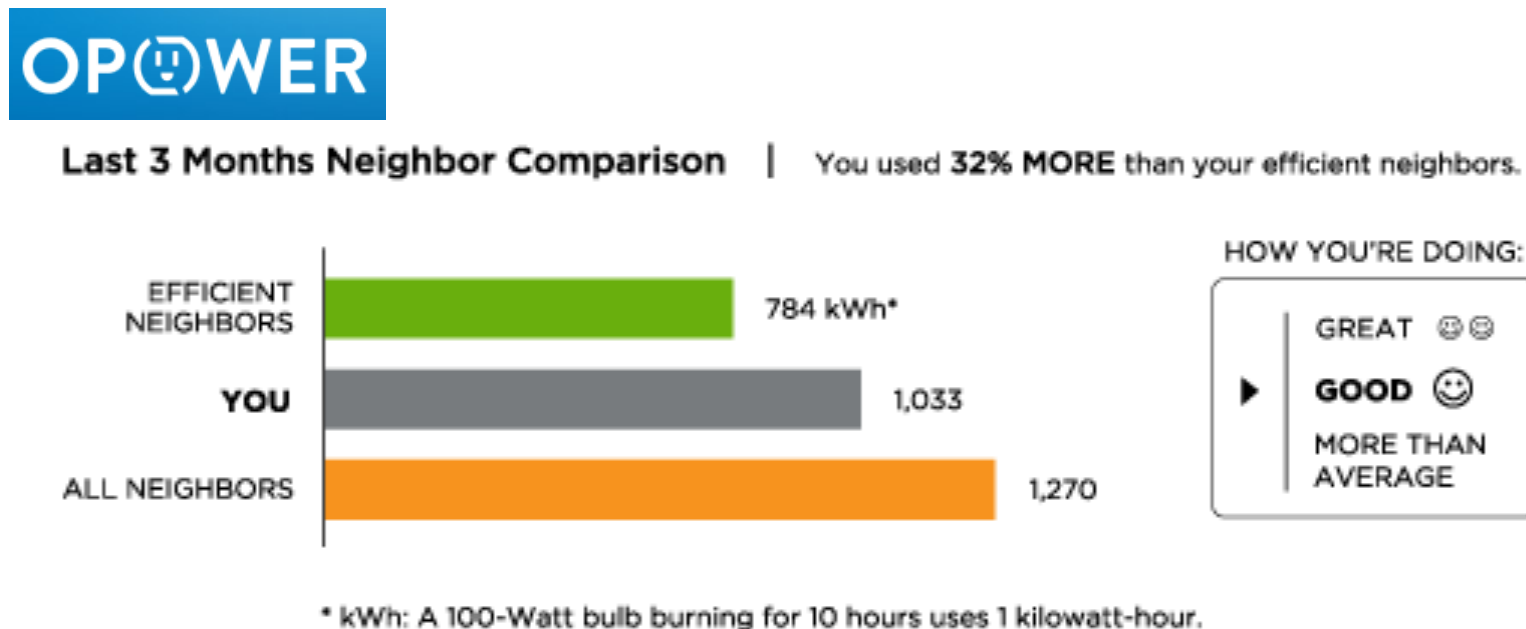
# An electrifying application of behavioral economics

## Data science

Analytics to provide personalized recommendations

## Behavioral science

Peer comparisons and other nudge tactics to prompt lower energy use



# Driving behavior change

## Data science

Use telematics data to create periodic feedback reports

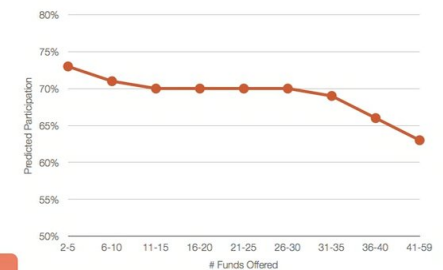
## Behavioral science

Peer comparisons and other nudge tactics to prompt safer and more environmentally-friendly driving



# Choice overload

- Choice overload
  - Results in customer disengagement
  - Stalling, avoid choosing until “tomorrow”
  - Reduced sales
- “Fraught choices” are:
  - Complex and/or require specialist knowledge
  - Made infrequently and have very slow “feedback”
  - Have important consequences, but only in the future
- Retirement fund study
  - Study of 1M Americans participating in 650 retirement plans
  - More funds offered → fewer people participate
  - People choosing among more funds make **worse** decisions



More Funds → Less Saving

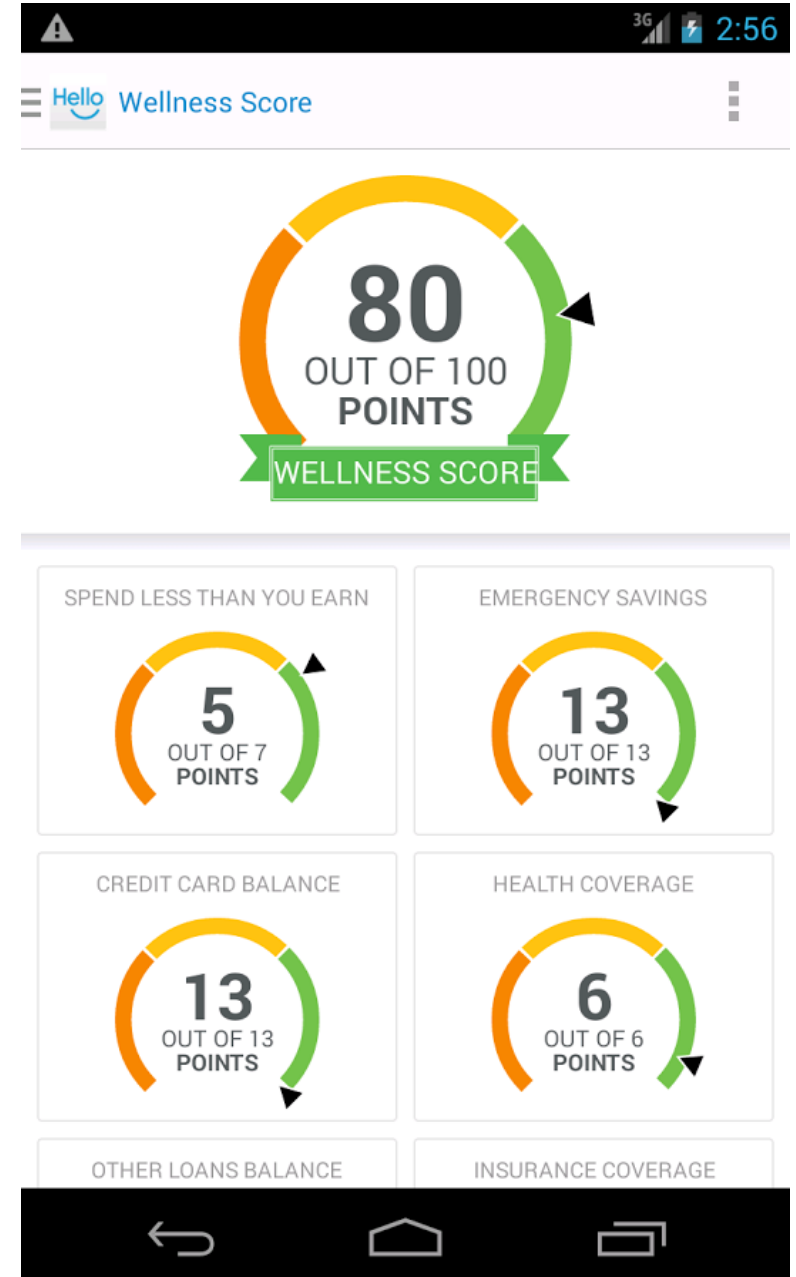
# Helping people make better insurance, financial choices

CHICAGO BASED POSITION

# MORNINGSTAR

**The Group:** On the Behavioral Insights Team, we use behavioral science to help people engage with and improve their finances. We then run rapid, digital experimental studies to determine what works, and what doesn't, and publicize the results.


**The Role:** Help millions of people retire with dignity and in comfort. Morningstar is looking for an applied behavioral scientist, to help understand and overcome the behavioral obstacles that individuals face to financing their retirement. You'll pursue original research alongside a team of like-minded behavioralists and leading academics from around the country. This position is based in our Chicago office.





# Using big data to humanize customer touch points

**Sociometric data** can be used to improve interactions with:

- Call center staff – training
- “eHarmony” matching of customers to call center staff
- Claims adjusters
- Health care providers
- Sales agents



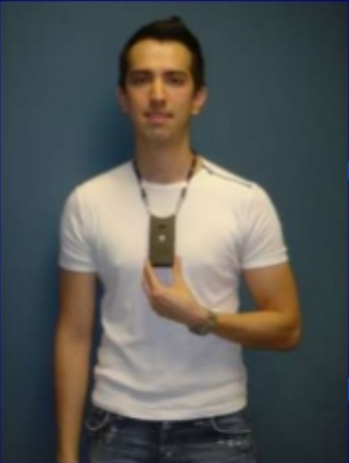
## Sociometric badges



Alex Pentland and his research team at MIT devised special badges to unveil our social interactions.

These badges can recognize each other, record our body movements, and the words that we speak.

They can be used to help us to understand the way in which technology, by measuring human interactions, could be used to better understand management in organizations, says Daniel Olguin, one of the researchers involved in the project.



Guillaud, H. (2008). Lifelogging: Badges sociométriques, Internet ACTU.net, <http://www.intemetactu.net/2008/01/30/lifelogging-badges-sociometriques/>, accessed May 16, 2014.

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27

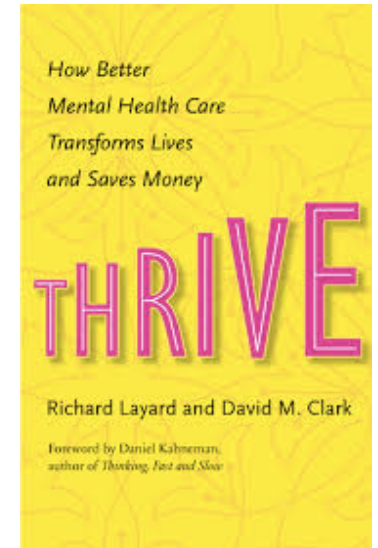
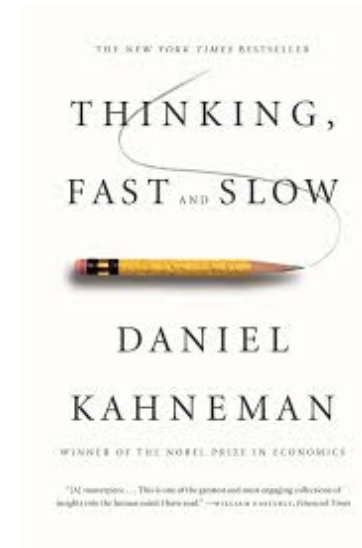
# The power of positive psychology

## Data science

Predictive models estimate severity / duration of workers comp claims

## Behavioral science

- Mild cases: use Opower-style peer comparisons to prompt timely return to work
- Severe cases: Cognitive Behavior therapy [CBT] reduces time away by 🚗40%



# Keeping ourselves honest

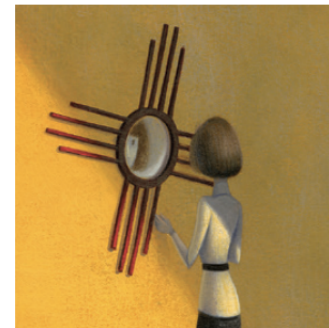
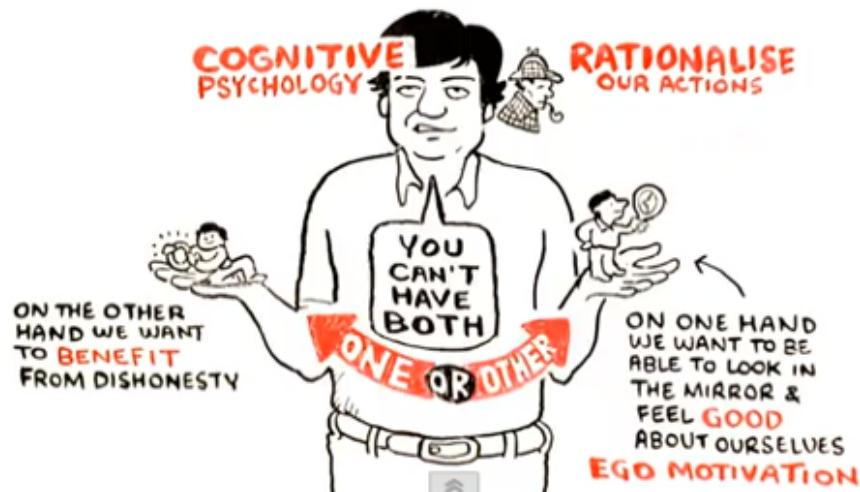
## Data science

Statistical fraud detection methods

## Behavioral science

Behavioral nudge tactics premised on the psychology of (dis)honest behavior

**DAN ARIELY** THE(HONEST) TRUTH ABOUT DISHONESTY



## Nudging New Mexico

Kindling honesty among unemployment claimants

BY JOY FOREHAND AND MICHAEL GREENE



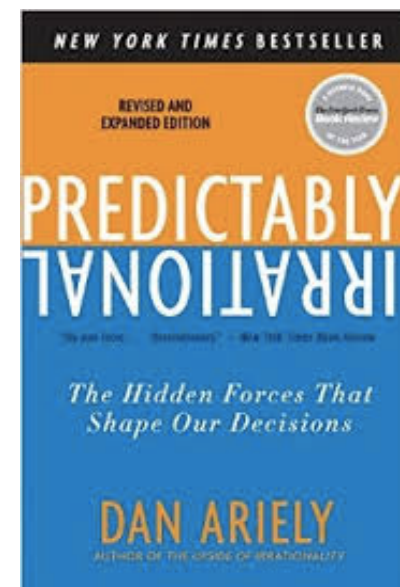
# Making Lemonade

“We’ve spent years deepening our understanding of honesty and trust, and our conclusion is that insurance is crying out for a makeover...

We need to create a very different system.”

-- **Dan Ariely**

Quoted in the Financial Times, February 24, 2016



# Copies available in the lobby

For the full story, go to:

<http://dupress.com/articles/dr14-personalized-and-personal/>

