Relational Big Data
How Data Collection Influences How We Live, Work, and Interact

Karen Levy
Cornell University
Social and legal dimensions of surveillance and data collection
How do we negotiate our relationships through information flow/restriction?

What’s the relationship between privacy and socioeconomic justice?

How do people resist data collection, and what purposes does it serve?
What’s big about “big data”?

-- Computational power
-- Velocity/volume/variety
-- New methods

Data mediate our social relationships to an unprecedented degree – “relational” big data
-- the workplace
-- the family
-- marginalized communities
Surveillance at work
New types of data capture
WHAT DATA THE
SOCIOMETRIC
BADGES COLLECT

WHEN PEOPLE
ARE TALKING AND
THEIR TONE OF
VOICE, BUT NOT
WORDS

BODY POSITION
RELATIVE TO OTHERS—
WHETHER PEOPLE
FACE EACH OTHER
AND HOW THEY STAND
IN A GROUP

BODY LANGUAGE,
INCLUDING ARM AND
HAND MOVEMENTS
AND NODS, BUT NOT
FACIAL EXPRESSIONS
New types of workplaces
New information flows
Truck crash prediction

Now, consider the Omnitracs Analytics industry model for accident prediction.

They took driver logs and turned each one into about a thousand distinct data points—from the amount of time the truck driver drove each hour of the day, to how many hours of sleep that driver got and when those hours occurred, to how many times that driver drove through sunrise.

Then, they took 27,000 severe accidents from their customers’ data sets and reverse engineered a severity model, which allowed them to identify predictive data points in a particular driver logbook that indicated the potential for a bad wreck.

The model is so good they can take any driver’s log book and predict the likelihood of a bad accident each hour of his or her day.
Traditional surveillance

Refractive surveillance
What Customer Data Collection Could Mean for Workers

by Solon Barocas and Karen Levy

AUGUST 31, 2016
DATA SOURCES
- Video Cameras
- Wi-Fi & Bluetooth Devices
- Guest Wi-Fi
- Point-of-Sale Systems
- Staffing Systems
- Promotional Calendars
- Payment Cards
- Weather
- Plus More

OUTPUTS
- Web Dashboard
- Custom Reports
- Real-time Alerts
- Mobile App
- Predictive Analytics
- Data Exports
- Custom Analysis
- Maps
- 3rd Party Apps (API)
Intimacy and care
Traditional surveillance

Consumer as surveillor
Forget We Are Even Here

If you are looking for a product and data to obsess over, look somewhere else. We want you to forget that we are even here. Trust that an extra set of eyes are watching over your baby so you can forget the stress and the worry and just enjoy the journey of being a parent. Go along, make memories with your child! We will be here when it is time to sleep.
Heavy equipment tracking

Track and monitor your company’s heavy equipment to prevent theft and optimize utilization.

Bank bag tracking

Protect bank bags with a location-aware tracking and recovery solution for banks.

Senior tracking | TBA

Secure, protect and locate the people that you value most, from children to aging parents.

High value retail tracking

Protect your high-value retail from theft with a covert, location-aware tracking solution.

Asset Tracker for Trailers™ | Sprint®

Track trailers, track drivers, and monitor the condition of sensitive and perishable cargo.

Comfort Zone Check-In® | Alzheimer’s Association®

Monitor a family member with Alzheimer’s using on-demand and scheduled location requests.

Asset tracking | TBA

Track and monitor your enterprise's valuable assets.

AmberWatch GPS™ | AmberWatch Foundation®

Use GPS and cellular technology to get your kids home safe.

Vehicle tracking

Find your car in a crowded parking lot, start your car from your phone and lock your car remotely.
'Avonte's Law' Proposes GPS Tracking For Autistic Kids, But Is It Ethical?
Can We Microchip Our Kids to Prevent Kidnapping?

Parents are increasingly looking to technology to keep tabs on their progeny

By Jordyn Taylor | 03/18/15 8:00am

"Many thanks to Dropcam for literally saving our dogs and house from what could have been a horrible fire had we not seen it happening live and been able to get back in time!"

Nick Dinsmoor

Technology to Enhance Lone Worker Protection

Each year, more than 23 million U.S. citizens work alone and in high-risk environments. Every day these “lone workers” suffer serious injury and death from workplace accidents, falls, assaults, and robberies. These incidents cost companies billions each year in lost productivity, lawsuits, insurance premium increases, and medical payments.
“Disconnecting often makes it worse. Clients are much more at risk when they actually separate from their abusers because he suddenly no longer has any control over that victim. So often the only thing left is through the phone[.]. . . If you change your number, now he’s most likely going to go crazy. So that’s when he’s going to start stalking you any way he can.”

(social worker)
HelloSpy

Need Hard Evidence Before Confronting Her? Here’s How to Catch Her Red-Handed

If you’re in a committed relationship, responsible for a child, or manage an employee

YOU HAVE A RIGHT TO KNOW
Find out the truth, spy on their Phone.

Buy Now
Rape Is Not a Data Problem

The tech sector has tackled sexual violence like it tackles laundry delivery, and entirely missed the point.
The Golden State Killer Case Was Cracked with a Genealogy Web Site

Law enforcement’s use of an open-source DNA ancestry database raises questions about genetic privacy

By Rebecca Robbins, STAT on April 28, 2018

Credit: Andrew Brookes Getty Images
Marginalization
The relationship between privacy and socioeconomic inequality
Want to Predict the Future of Surveillance? Ask Poor Communities.

VIRGINIA EUBANKS  JANUARY 15, 2014

Civil Rights Principles for the Era of Big Data

Technological progress should bring greater safety, economic opportunity, and convenience to everyone. And the collection of new types of data is essential for documenting persistent inequality and discrimination. At the same time, as new technologies allow companies and government to gain greater insight into our lives, it is vitally important that these technologies be designed and used in ways that respect the values of equal opportunity and equal justice. We aim to:

The Class Differential in Privacy Law

Michele Estrin Gilman†
AUTOMATING INEQUALITY
HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR

— NAOMI KLEIN

This book is downright scary—but... you will emerge smarter and more empowered to demand justice.

VIRGINIA EUBANKS
Data Violence and How Bad Engineering Choices Can Damage Society

Cultural harms can go well beyond search results — which can be bad news for vulnerable communities

Anna Lauren Hoffmann
Apr 30 · 12 min read
The downside of seamlessness
"I have disabled a car while I was shopping at Walmart," said Lionel M. Vead Jr., the head of collections at First Castle Credit Union in Covington, La., who said that starter interrupt devices and GPS tracking technology had made his job easier. Cheryl Gerber for The New York Times
Data ethics: how???
Volkswagen Emissions Fraud Impacted 11 Million Cars, Could Cost $7 Billion To Fix

By Jeremy Stahl

I want my money back, Volkswagen.

Photo by PETER PARKS/AFP/Getty Images
2018 ACM Code of Ethics and Professional Conduct: Draft 3

Draft 3 was developed by The Code 2018 Task Force. (It is based on the 2018 ACM Code of Ethics and Professional Conduct: Draft 2).

1. GENERAL MORAL PRINCIPLES.

A computing professional should...

1.1 Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing.

This principle, concerning the quality of life of all people, affirms an obligation of computing professionals to use their skills for the benefit of society, its members, and the environment surrounding them. This obligation includes promoting fundamental human rights and protecting each individual’s right to autonomy in day-to-day decisions. An essential aim of computing professionals is to minimize negative consequences of computing, including threats to health, safety, personal security, and privacy.

Computing professionals should consider whether the results of their efforts respect diversity, will be used in socially responsible ways, will meet social needs, and will be broadly accessible. They are encouraged to actively contribute to society by engaging in pro bono or volunteer work. When the interests of multiple groups conflict, the needs of the least advantaged should be given increased attention and priority.
Facebook, Cambridge Analytica, and the Regulator’s Dilemma: Clueless or Venal?

April 4, 2018

by David C. Vladeck
Algorithmic Impact Assessments: Toward Accountable Automation in Public Agencies

An automated decision system from The Twilight Zone's “Nick of Time” (1960)