Cops and Robbers - Las Vegas Style
(And Other Stuff I Think About)
Background

- 1983: Founded Systems Research & Development (SRD)
- 1992: Assisted Vegas casinos in detecting the subjects of interest - resulting in a technology known as Non-Obvious Relationship Awareness (NORA)
- 1996: Created an identity-centric customer repository based on 4,200 disparate systems ... >100 million resolved identities
- 2001/2003: Funded by In-Q-Tel, the CIA's venture capital arm
- 2003: Demoted self, hired a CEO
- 2005: SRD acquired by IBM, now Chief Scientist, IBM Entity Analytics
- Today: Focus is in the area of ‘sensemaking on streams’ with special attention towards privacy and civil liberties protections
Macro Trends
Web 2.0
Good News: The World is Not More Dangerous

1900: Western Europe
Today: Global Average

1300's: “Black Death”
Today: If America sunk into ocean and everyone dies

Avg. Age

67
37

Number Dead

75M ~17+%
300M ~4.5%

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"More Death Cheaper in Future" Graph

- 10 Kiloton Nuke
- 1918 Spanish Influenza
1918 Spanish Influenza Genome

1918 PB2 (Segment 1)

MERIKELRDLMSQSRTRILTVDKMAI-30
26 ATGGAAAGAATAAAAAGAATAGGGATCTAAATGTCGCAATCGGTCTCGCAGCTCGCAGGATACCTACAAACCAACCGGTGGACCATATGGCCATA

IKKYTSGRQEKNPALRMKWMMAAAAKYPITAD-60
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KRIMEMIPERNEQGQTLSKTRNDAGSDRVVM90
AAGAGGATAATGGAAATGATTCCCTGAGAAGAATGAGCAAGCAAAACTCTATGGAGTAAACGAAACGATGCCGAGATCGGAGATGGTATG-297

VSPLAVTWNNRNGPTTSAVHYPKICYKTUYFE-120
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CATGCGAGATCTCAGTGGCAGCAAGGACAGGAGTAAATGGAAGTTTTTTCCAAAAACGAAGTTGGGACAGGTACTAACAATCAGGAA-567

SOILTITKEKKEELQDCKISPLMVAYMELERE-210
TCGCAACTGACATTAAACAAAAAGGAGAGAAAGAGAAGAATCCAAAGATTGAAAATTTTCTCTTTAATGTTGGCACTACATGGGAGAGAAGAA-657

LVKTRFLPVAGGTSSVYIEVHLHTQGTCCW-240
CTGGTGACCAGGAAAACAGATTTCTCCACAGTGCTGGGAGACAGCAGTGTGATATTGGAAGTGGTCATTGACATCAAGGAACATGCTGG-747

FOMYTPGGFVBRNDDVDOSLLTIAARNJTVRBA-270
"More Death Cheaper in Future" Graph

- 10 Kiloton Nuke
- Easier
- More Death
- 1918 Spanish Influenza

= Bad
Jerome Kerviel - US$7B

www.chinapost.com.tw/news_images/20080127/p1d.jpg
Jerome Kerviel - US$7B

Back it out  Back it in  Back it out  Back it in

Analytic Checkpoint

1 Day

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Domains for Competitive Advantage

Human Capital

Data

Tools

Fastest Sensemaking

First
“Every millisecond gained in our program trading applications is worth $100 million a year.”

Goldman Sachs, 2007 * Source Automated Trader Magazine 2007
Las Vegas: An Ideal Laboratory
Fact or Fiction?

- Does the Bellagio Hotel and Casino really have a “vault” as depicted in movie Ocean’s 11?

- Have casinos specifically targeted x-felons for employment?

- Do casinos perform background checks of guests against public records?

- Is facial recognition technology being used to monitor the doors for the early detection of cheaters?

- Is there a gaming related watch list you can put yourself on ... but not cannot take yourself off?

- Does the gaming industry offer assistance in the creation of false identities and cover stories?
Las Vegas: Stats

- Fastest growing city in the United States
- 38 million visitors a year
- 18 of the 20 largest hotels in the world
- A mega-resort can support in excess of 100,000 customers a day
- Each resort contains 100+ system and with 20,000+ sensors (data collection points)
- Lateral information sharing to enhance prediction (known cheaters, credit worthiness, etc.)
The Las Vegas Lab

- False identities
- Distant recruiting
- Internet-based sharing of vulnerabilities and tradecraft (inc. device production)
- Recruitment of trusted entities
- Insider threats are highest risk
The Scams ...

- Cheaters
- Advantage players (e.g., card counters)
- Insider threats/collusion
- Money laundering
- Credit and check fraud
- Insurance scams (e.g., slip and falls)
- Armed cage takeovers
- Executive kidnapping
Cheating Las Vegas
Hardware Vulnerabilities
**Card Counting “101”**

<table>
<thead>
<tr>
<th>Card Value</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 6</td>
<td>+1</td>
</tr>
<tr>
<td>7 - 9</td>
<td>0</td>
</tr>
<tr>
<td>10, J, Q, K &amp; Ace</td>
<td>-1</td>
</tr>
</tbody>
</table>

![Card Images]

+1  +1  +1  -1  -1  +1  -1  0
Card Counting Bet Variation

Count -2  Count +1  Count +4  Count +6

$5  $5  $5  $1,000
Count Teams
Other Hacks

- Card bending
- Card daubing/marking
- Concealed card counting devices
- Video poker Royal Flush generator
- Keno random number defect
- Real-time roulette physics for prediction
- Traffic analysis of roulette wheel bias
- Shuffle tracking
- Manufactured marked cards
- Poker teams
- Rigged poker game
The newly hired employee had previously been arrested for stealing from you ... same store!
And Sometimes Tragic

Foster Parent Applicant  Violent Criminals

Ryan Dexter George

Sherry Charlie - She died less than one month after being placed in the home of Ryan Dexter George.
Who is Who? Who is Related to Who?

**Good Guys**
- Customers
- Prospects
- Employees
- Vendors
- Victims

**Subjects of Interest**
- Exclusionary List
- Federally Banned
- Gaming Felons
- Card Counters
# Case Study: Las Vegas Casino

## Data Sources
- 20,000 plus employees
- All vendors
- All slot club & table games-related players
- In-house arrests/incidents
- Known cheaters

## Detected Relationships
- 24 active players were known cheaters
- 23 players had relationships to prior arrests/incidents
- 12 employees were themselves the player
- 192 employees had possible vendor relationships
- 7 employees were the vendor
Case Study: US Federal Agency

Data Sources

- 20,000 plus employees
- 75,000 plus vendors
- 200,000 plus Type 1 security risk entities
- 200,000 plus Type 2 security risk entities

Detected Relationships

- 140 employee relationships to vendors
- 1451 potential vendor relationships to security risks
- 253 employee relationships to security risk entities
- 2 vendors were the security risk
- “n” employees were the security risk/vendor
In Closing
Trend: Organizations are Getting Dumber

- All Digital Data
- Growing Dumber
- Sensemaking Algorithms
The Way Forward

All Digital Data

Context Engines

Sensemaking Algorithms

Computing Power Growth

Time
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- How to Use a Glue Gun to Catch a Liar
- It Turns Out Both Bad Data and a Teaspoon of Dirt May Be Good For You
Fact or Fiction?

- Does the Bellagio Hotel and Casino really have a “vault” as depicted in the movie Ocean’s 11? **False**

- Have casinos specifically targeted x-felons for employment? **True**

- Do casinos perform background checks of guests against public records? **False**

- Is facial recognition technology being used to monitor the doors for the early detection of cheaters? **False**

- Is there a watch list you can put yourself on, but not take yourself off? **True**

- Does the gaming industry offer assistance in the creation of false identities and cover stories? **True**
Blogging At:

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Information Management
Privacy
National Security
and Triathlons

Questions?
Cops and Robbers - Las Vegas Style

(And Other Stuff I Think About)