

# RSA® Conference 2020

San Francisco | February 24 – 28 | Moscone Center

HUMAN  
ELEMENT

SESSION ID: LAW-W0

## Pre-Crime Detection of Active Shooters using Predictive Policing Systems



**Jeffrey J. Blatt**

X Ventures

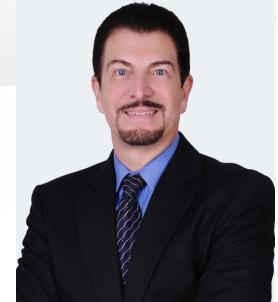
[www.xventures.com](http://www.xventures.com)

Twitter: @techlawexpert

#RSAC

## A little more about me...

- Pioneer Silicon Valley Technology Lawyer (e.g. Apple, Intel, Broadcom)
- Background in Engineering, Law, Law Enforcement
- Experienced California law enforcement officer/Palantir trained/ FBI and California Dept of Justice certifications in cyber investigation and to participate in lawful electronic interception/surveillance
- Frequent speaker & author on data privacy, encryption, digital surveillance, lawful government access to data in criminal investigations and the legal, social and public safety effects of technology driven policing
- Accused of Being a *Data Privacy Realist*  
*(former Data Privacy Evangelist)*



## Our Objectives In This Session

- Explore the challenges of identifying Active Shooters before they commit an active shooting
- Understand Behavior Threat Assessment factors to identify potential active shooters (Pre-Crime) for human intervention to prevent an active shooting event
- Understand the concept of “All Source Data Collection” (*aka* Total Data Collection) and a Deterministic Universe Model to predict future behavior
- Explore the current state of Predictive Policing Systems (Intelligence Led Policing initiatives) in the U.S.

## Our Objectives In This Session (con't)

- Explore the conceptual possibility of ultimate end point evolutions of Machine Learning (ML) driven Predictive Policing Systems using All Source Data Collection to scan for active shooter Behavior Threat Assessment factors
- Discuss the privacy and positive/negative social utility implications of deploying an All Source Data AI Driven Predictive Policing System to detect likely active shooters before an attack takes place
- Hear your thoughts regarding the desirability of deploying an All Source, AI driven, predictive policing systems to detect likely active shooters for early (human) intervention/evaluation

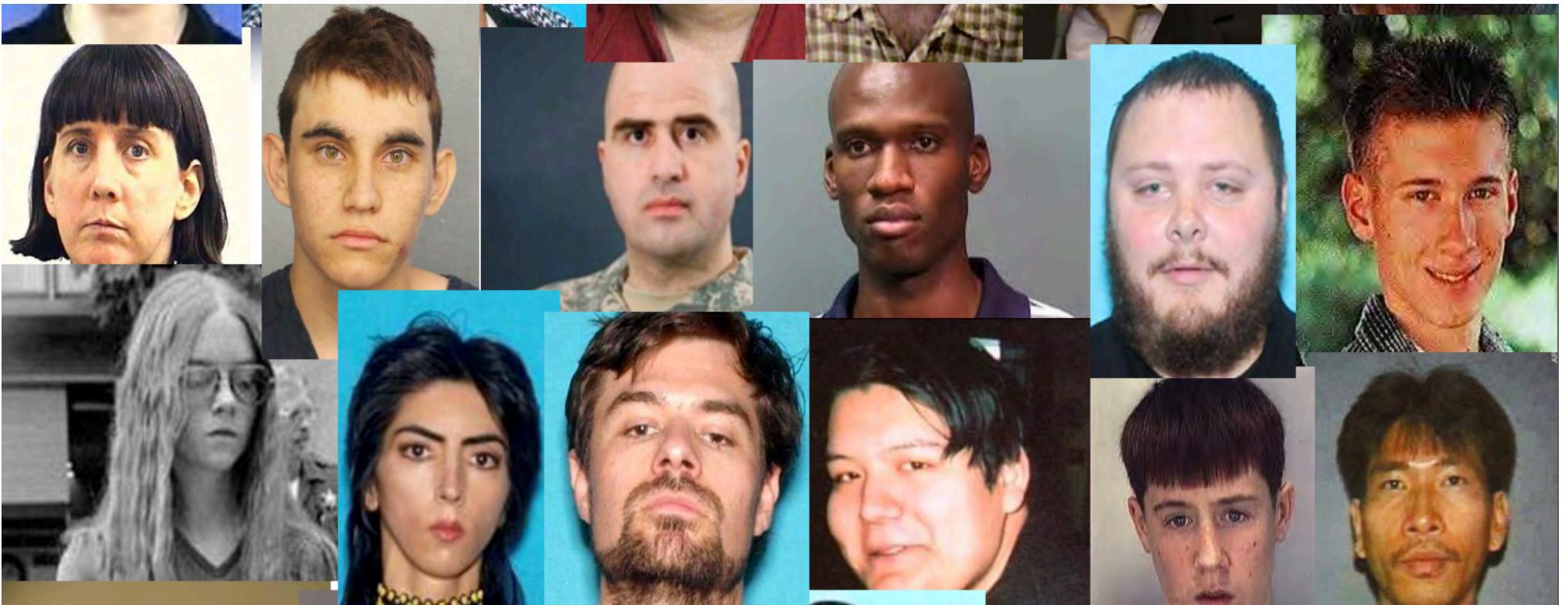
**DISCLAIMERS**

EXPERTISE  
STATUTORY RIGHTS  
**LIABILITY**  
HARD PRINCIPLES  
COMPANY SIGNATORY LEGAL MANAGEMENT  
USER INTERPRETATION  
**PRODUCT AGREEMENT**  
BOUND  
ARTICLE PRODUCTS  
APPENDIX PRODUCTION PROCEDURES  
RIGHTS  
MEMBERSHIP SUB-CLAUSE DOWNLOAD APPROVAL  
PROTECTION  
VIOLATION  
CHARTER LAWYER  
LEGALLY  
PROTECTION  
PARTNERSHIP STANDARD FORM CONTRACT  
**CONTRACT**  
ARTICLE PRODUCTS  
APPENDIX PRODUCTION PROCEDURES  
RIGHTS  
MEMBERSHIP SUB-CLAUSE DOWNLOAD APPROVAL  
PROTECTION  
VIOLATION  
CHARTER LAWYER  
LEGALLY  
PROTECTION  
PARTNERSHIP STANDARD FORM CONTRACT  
**BINDING**  
SALE PARTIES  
CONVENTION TIME JARGON TERM  
NEGLIGENCE COPY  
FAULTY  
TERMINOLOGY REGULATIONS  
SALES  
**LAW**  
CONVENTION TIME JARGON TERM  
NEGLIGENCE COPY  
FAULTY  
TERMINOLOGY REGULATIONS  
SALES  
**CLAUSE TERMS**  
TERMS OF USE  
**TERMS OF USE**  
CONTRACT  
BINDING  
SALE PARTIES  
CONVENTION TIME JARGON TERM  
NEGLIGENCE COPY  
FAULTY  
TERMINOLOGY REGULATIONS  
SALES  
**NOTICE**  
AUTHORISATION  
ACKNOWLEDGEMENT  
**DOCUMENT**  
INFRINGEMENT THIRD PARTY  
ACCEPT BLACK  
WEAR AND TEAR  
BREAK DEFECTIVE RESTRICTIONS  
LENGTHY  
**CONDITIONS**  
USE  
FONT SIZE  
**CUSTOMER**  
CONTRACTUAL LEGAL ADVICE DEED  
CUSTOMERS  
DAMAGES GENERAL  
APPLICATION  
PERIOD READ  
APPLICABLE  
PARTY ACCEPTANCE  
SERVICE LEVEL AGREEMENT  
**GUARANTEE**  
CANCELLATION  
WARRANTY  
LAWSUIT  
SUBLICENSE BOLD  
GUIDELINES  
TRADE EXCLUSIVE  
BREAKAGE  
INDUSTRY  
**BUSINESS**  
SIGN  
SIGNED  
APPLY  
RELEASE  
CLIENTS  
**COPYRIGHT**  
FEE  
SALE OF GOODS  
INTELLECTUAL PROPERTY  
CERTIFICATE  
ADVICE  
INFRINGEMENT  
CONDITION POLICY  
**CONSUMER**  
SIGNATURE  
STANDARD  
INDUSTRY  
STATUTORY  
RULES  
**PATENT**  
AUTHOR LICENSE FRAUD  
AGENCY CODE OF PRACTICE DETAIL  
**SMALL PRINT**  
**SATISFACTION**

**RSA®Conference2020**

## **ACTIVE SHOOTER ATTRIBUTES**

## What Does an Active Shooter Look like?



CAN YOU IDENTIFY THE ACTIVE SHOOTER?

**THERE IS NO 'PROFILE' OF AN ACTIVE SHOOTER**

**EVERYONE IN THE PREVIOUS SLIDE IS/WAS AN ACTIVE SHOOTER\***

\* courtesy of [www.smithstrategics.com](http://www.smithstrategics.com)



# U.S. Secret Service National Threat Assessment Center



United States Secret Service  
**NATIONAL THREAT ASSESSMENT CENTER**

**MASS ATTACKS IN PUBLIC SPACES - 2018**

U.S. Department of Homeland Security

## By the Numbers

**50**

incidents in 21 states

2014/2015: 40 incidents in 26 states

**943**

casualties (excluding the shooters) 221 killed; 722 wounded.

2014/2015: 231 casualties (excluding the shooters); 92 killed and 139 wounded.

**13**

law enforcement officers killed

2014/2015: 4 law enforcement officers killed

**20**

law enforcement officers wounded

2014/2015: 10 law enforcement officers wounded

**20**

met "mass killing" definition

2014/2015: 20 met "mass killing" definition

**14**

incidents ended with the exchange of gunfire between the shooters and law enforcement

2014/2015: 14 incidents ended with the exchange of gunfire between the shooters and law enforcement

**50**

shooters — all male

2014/2015: 42 shooters.  
39 male; 3 female.

**3**

shooters wore body armor

2014/2015: 2 shooters wore body armor

**13**

shooters committed suicide

2014/2015: 16 shooters committed suicide.

**11**

shooters killed by police

2014/2015: 14 killed by police

**8**

shooters stopped by citizens

2014/2015: 6 stopped by citizens.

**18**

shooters apprehended by police

2014/2015: 12 apprehended by police.

## There is NO ‘Profile’ of an ‘Active Shooter’ -

- Men and Women (majority have been men)
- Different ethnicities (across the spectrum)
- Different ages (youngest 11 -> oldest 88)
- Different weapons (usually handguns (56%), (43%) rifles/shotguns

### Focus Must be on *Behavior* To Identify Potential Active Shooters

“Behavioral threat assessment” is a set of investigative and operational techniques that can be used to ...identify, assess and manage the risks of targeted violence and its potential perpetrators”...Fein, R., Vossekuil, B. & Holden, G. (1995) *Threat Assessment: An Approach to Prevent Targeted Violence*

# Behavioral Threat Assessments

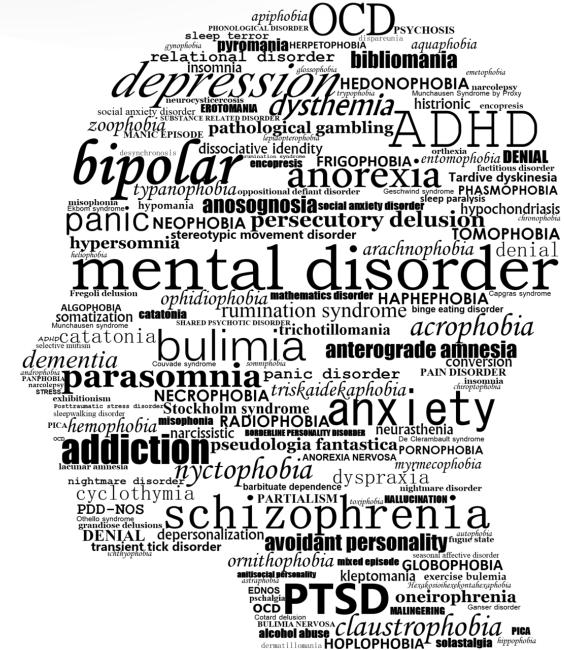
## “Pathway to Violence”

- Proactive approach to prevent targeted violence focusing on *pre-crime behavior*
- Examples of Behavioral Threat Indicators:
- Pathway warning behaviors -> behavior that is part of the research, planning or implementation of an attack
- Fixation warning behaviors -> any behavior that indicates an increasingly pathological preoccupation with a specific cause or person



## Examples of Behavioral Threat Indicators (Con't)

- Identification Warning Behavior
  - Desire to be a ‘pseudo commando’
  - Close association with weapons/law enforcement/military
  - Identify oneself as an agent to advance a cause or belief
  - Identification with previous attackers
- Novel Aggression Warning Behavior
  - Act of violence that is unrelated to any targeted violence pathway warning
- Last Resort Warning Behavior
  - Seems depressed no ‘spark’ with friends and family



## Examples of Behavioral Threat Indicators (con't)

- Communicated Threat Warning Behavior
    - Subject directly threatens target (may be on social media)
  - Leakage Warning Behavior
    - Communicating an intent to commit a violent act to a third party (may be in joking way and/or on social media)



#124913860

# Threat Indicators as *Data Inputs*

- Behavioral Threat Indicators manifest themselves as data:
    - Social Media posts
    - Electronic communications (email/text messages)
    - Web search histories
    - Medical history (including psychological)
    - Financial transactions (e.g. purchase of firearms)
    - School behavior records
    - Friends/family (may be reflected on social media)
    - Criminal justice history/police contacts
    - Phone calls
    - Public and private digital surveillance systems
    - Many other sources of data related to threat indicators





Could a data processing system  
potentially identify an active shooter  
before the crime takes place?

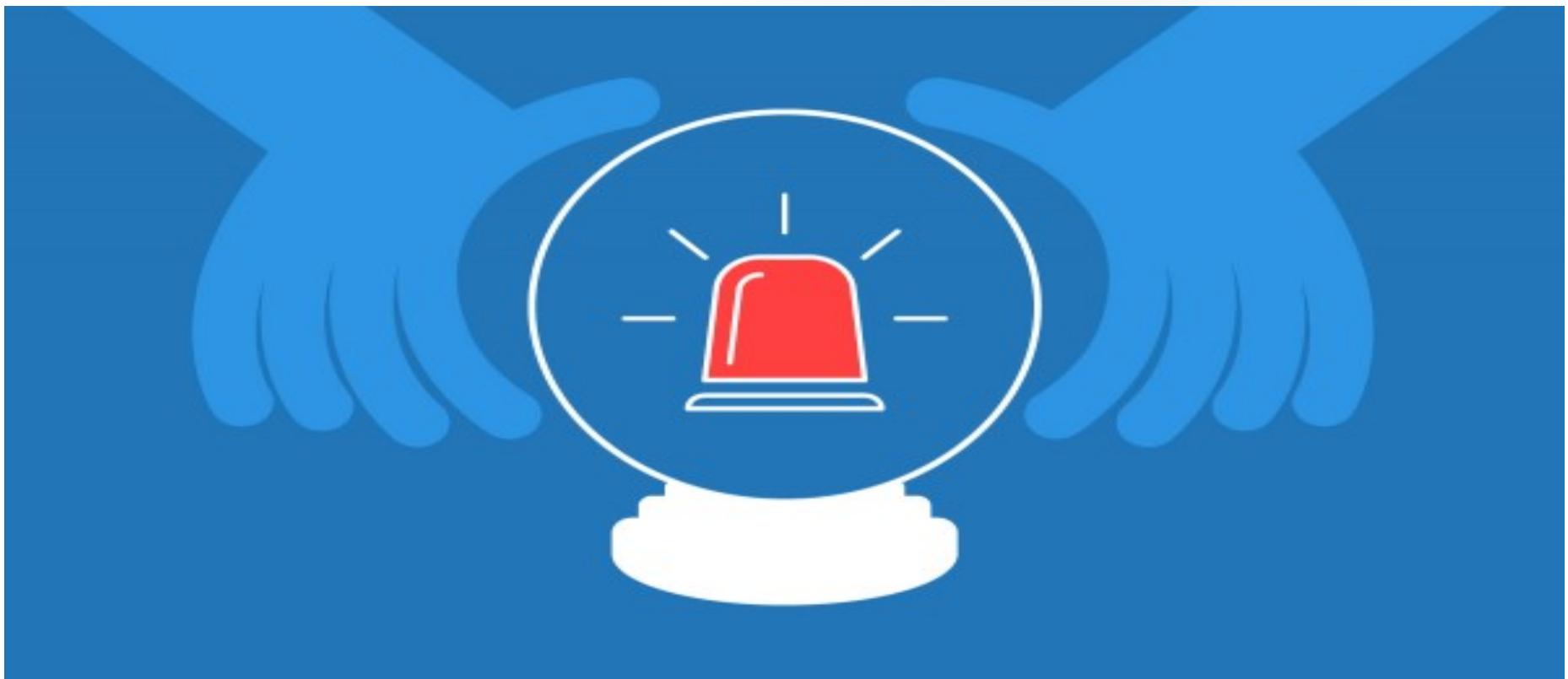
## Concept: The Deterministic Model of the Universe in a Nutshell

#RSAC

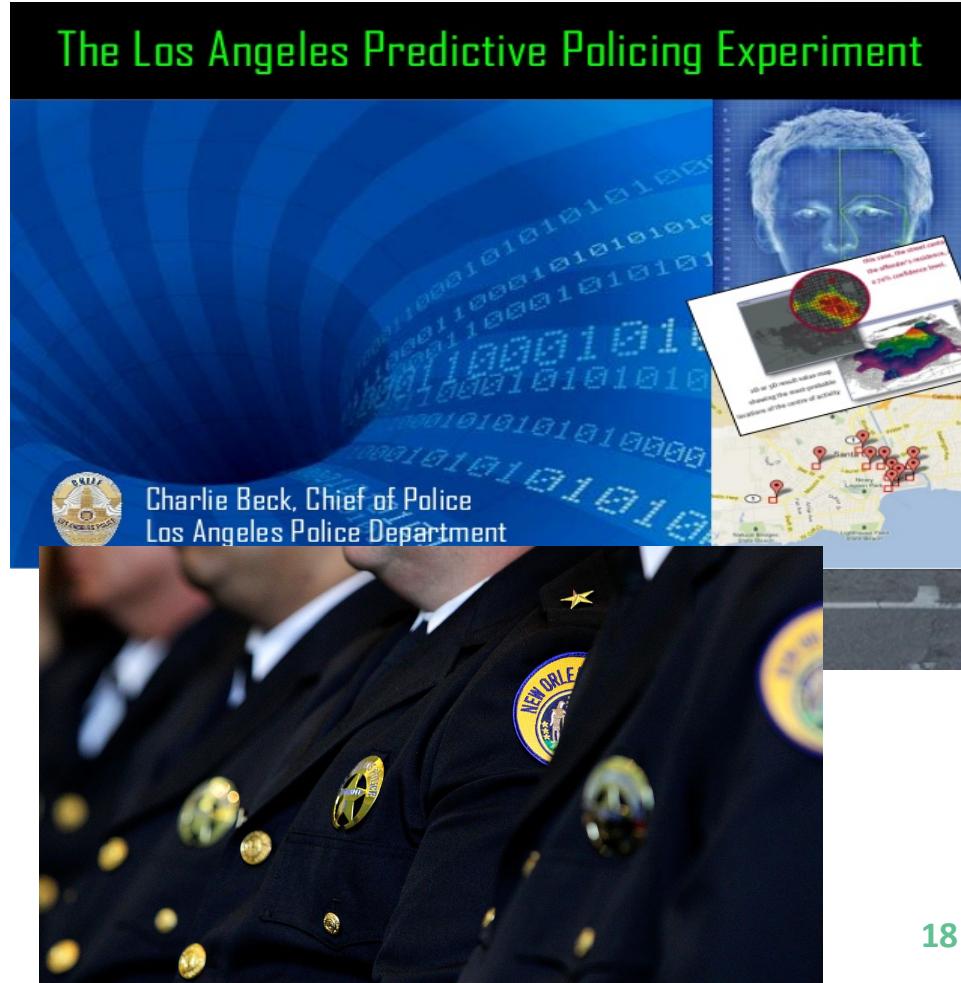
- Premise: With enough data the actions of the universe and all things it contains can be predicted
- Actions appear random because we do not have enough data to fully understand and model the particular system
- IF we knew everything about everything, we can predict events/outcomes, future movements.
- Example: Newtonian Physics
- Exception: Quantum Physics



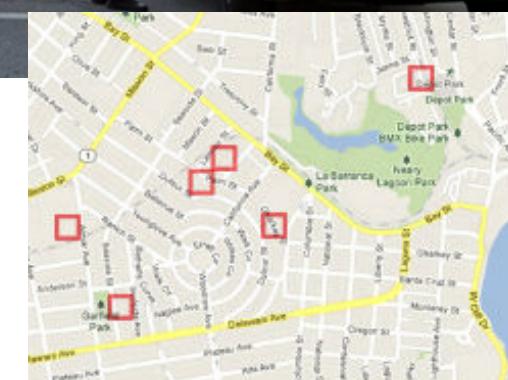
Let's use 'determinism' as a basis for predicting likely times and places of future criminal activity...



## Current Generation Predictive Policing Tests



18



Conference2020

## So...what if we created a Predictive Policing System Focused on Active Shooter Behavior Threat Indicators?

- All Source Data Collection – provide the system with access to all data sources (e.g. social media, medical HIPAA protected data, academic, employee discipline, criminal justice, financial, credit cards, DMV, ALPR, FRT...*everything... (yeah, I know it would be illegal to include some of these without consent...but let's just assume you could)*)
- Teach the ML system to scan all data inputs (*on everyone*) to identify Behavioral Threat Indicators and connect the dots
- Potential 'hits' would then be evaluated by a human team to assess if further follow up is merited and intervention

# RSA®Conference2020

Could such a system be created?



## Israel is a pioneer in advanced AI....

“The General Security Service invests heavily in AI and ML and accumulates vast amount of data to train deep learning systems to identify patterns within the data. A main innovation in recent years is the ability of AI to understand human thought through language... An ‘event’ does not just happen it always follows previous events. We can make accurate prediction processes for events...theoretically we can predict future actions” ....*unattributed Israeli AI/ML expert (2019)*



# NSA may already have the tech to collect/process what our proposed system would require...just saying...

#RSAC



## PRISM/US-984XN Overview

OR

## *The SIGAD Used Most in NSA Reporting* Overview

April 2013

Derived From: NSA/CSSM 1-52  
Dated: 20070108  
Declassify On: 20360901  
TOP SECRET//SI//ORCON//NOFORN



Current Providers

- Microsoft (Hotmail, etc.)
- Google
- Yahoo!
- Facebook
- PalTalk
- YouTube
- Skype
- AOL
- Apple

What Will You Receive in Collection  
(Surveillance and Stored Comms)?  
It varies by provider. In general:

- E-mail
- Chat – video, voice
- Videos
- Photos
- Stored data
- VoIP
- File transfers
- Video Conferencing
- Notifications of target activity – logins, etc.
- Online Social Networking details
- Special Requests

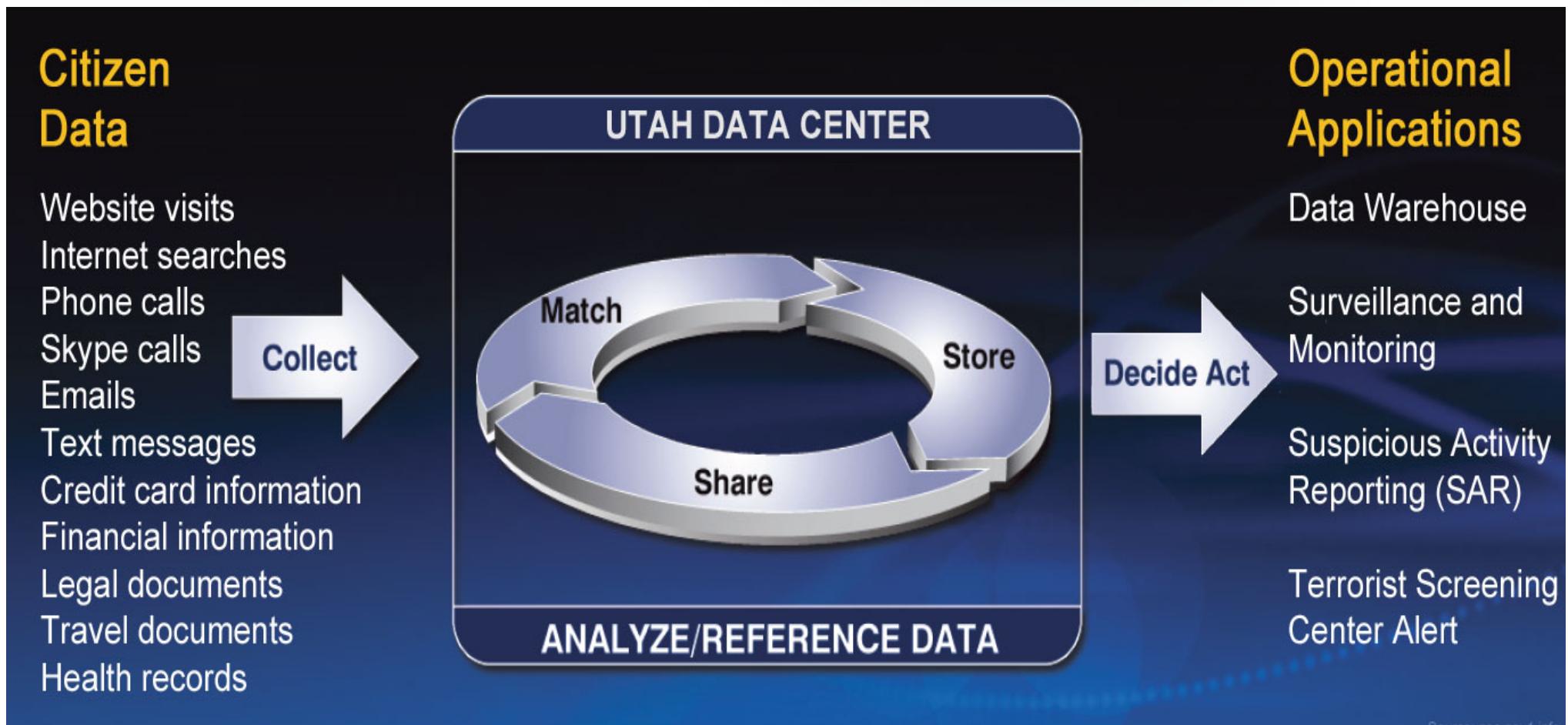
Complete list and details on PRISM web page:  
[Go PRISMFAA](#)

TOP SECRET//SI//ORCON//NOFORN

# Identifying a potential terrorist...or identifying a potential Active Shooter...it's all about data



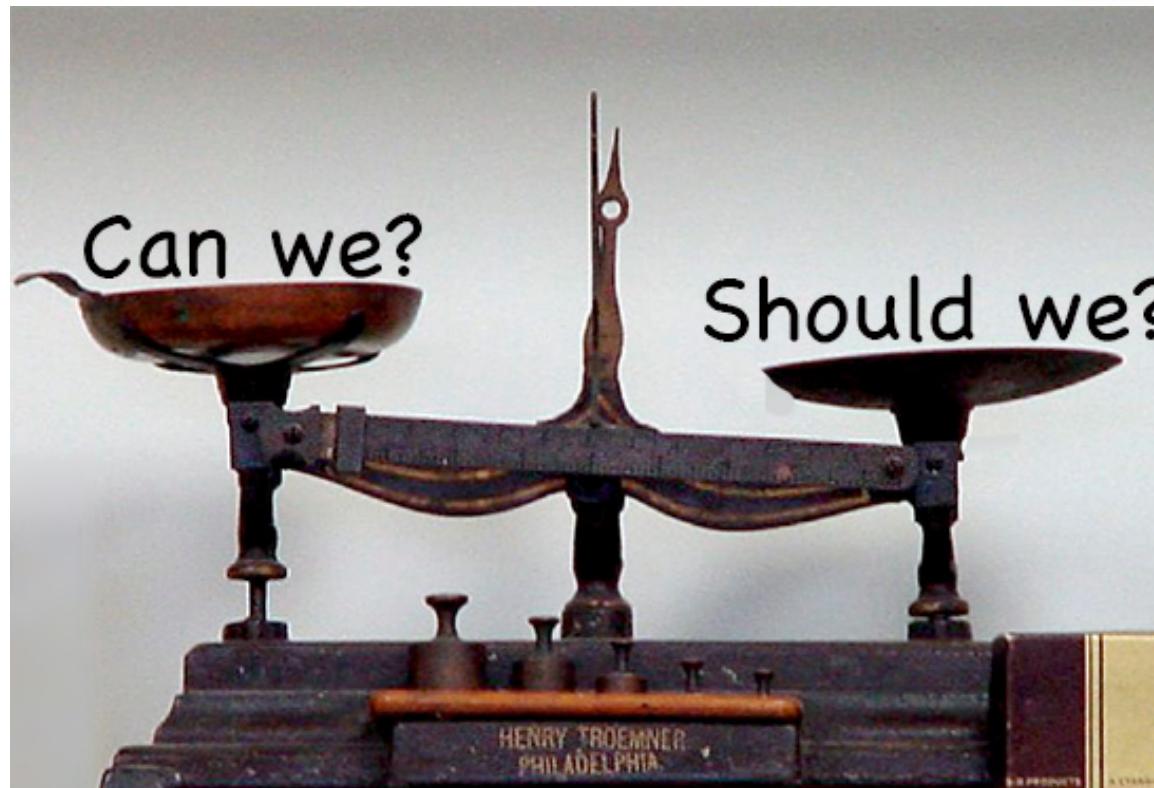
Perhaps conceptually it would look like this...(source:  
*parody site not associated with the NSA*)...



Ok -so assume the tech exists....now for the big question....



Should we build it?  
Does the social benefit/utility outweigh the loss of privacy?



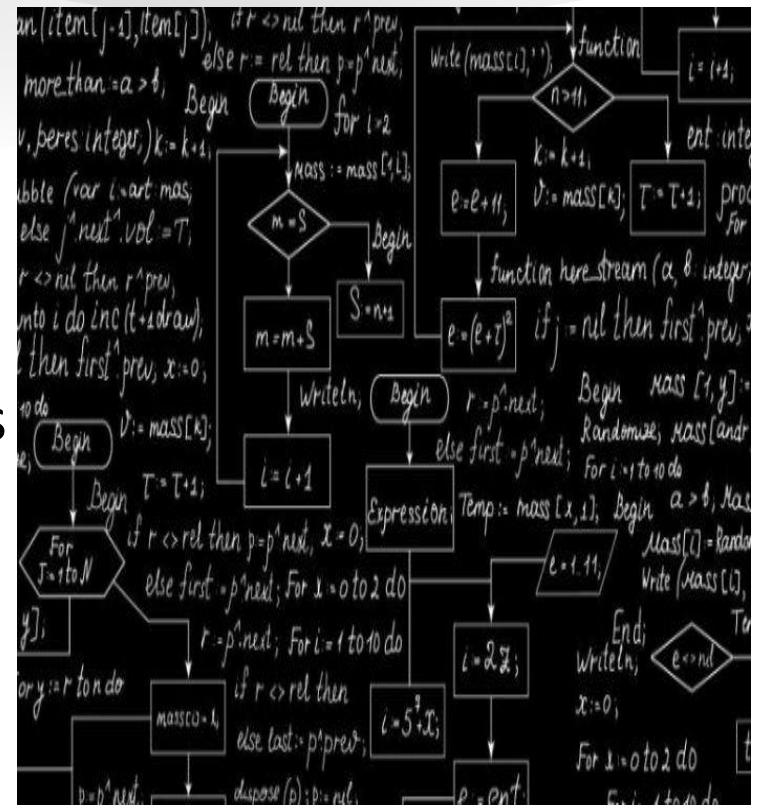
## Social Utility Balance....

- Positives:
  - Identify individuals who exhibit behavior threat indicators as identified by an ML driven predictive policing system (no humans involved)
  - Allow a human team to decide if further follow up is warranted and which to be contacted for potential intervention
  - Reduce (hopefully very dramatically) Active Shooter incidents
- Negatives: Potential (if left unchecked)
  - Loss of privacy in all aspects of your life
  - Loss of anonymity
  - Loss of legal rights (e.g. 4<sup>th</sup> Amendment )



## Black Box Issues:

- Machine Learning systems teach themselves to optimize decision processes
  - Through this self optimization process it becomes difficult to trace how decisions are made
  - ‘Bias’ as perceived by humans may be virtually impossible to uncover – essentially undiscoverable in the heart of optimization engines



## Lot's of Practical Issues

- Public transparency of the algorithms and data inputs
- Minimize algorithmic bias potential that can taint predictions
- Legal defense and discovery issues



But...certainly not impossible to overcome IF society believes the benefits exceed the costs

1984  
WAS  
NOT  
SUPPOSED  
TO BE AN  
INSTRUCTION  
MANUAL



## Some Key Takeaways...My View

- Technology and Big Data make an ML driven All Source Collection Predictive Policing system to benchmark established threat indicators possible.
- Governments have legitimate state interests in providing safety and security for citizens but...
- There is no question a system as described to detect Active Shooters would require each of us to give up privacy and other rights. Is it worth it?
- Currently insufficient safeguards exist (data integrity, fairness of algorithms, potential misuse, data security/breach protection) including legal/civilian checks/balances – but the system could theoretically be built with sufficient algorithmic transparency



## Apply What You Have Learned Today

- Next Week:

- For Enterprises/Individuals: Research and identify relevant data collection and predictive policing government initiatives that exist or may be adopted in your areas of operation/jurisdictions

- Over the Next Four Weeks:

- For Enterprises: Define potential opportunities for your enterprise created by the government initiatives identified
- For Individuals: Consider steps to minimize your digital footprint  
<https://inteltechniques.com/book4.html>)

- Over the Next Three Months:

- For Enterprises: Take positive steps to tender or pitch your products/services to relevant government agencies
- For Individuals: Minimize your digital footprint and be paranoid

Q/ANSWERS  
UIONS

# THANK YOU!

Jeffrey J. Blatt

[www.xventures.com](http://www.xventures.com)

Email: [info@xventures.com](mailto:info@xventures.com)

Twitter: @techlawexpert