

# RSAC Studio

## DAR-WIN or LOSE: the Anthropology of Security Evolution



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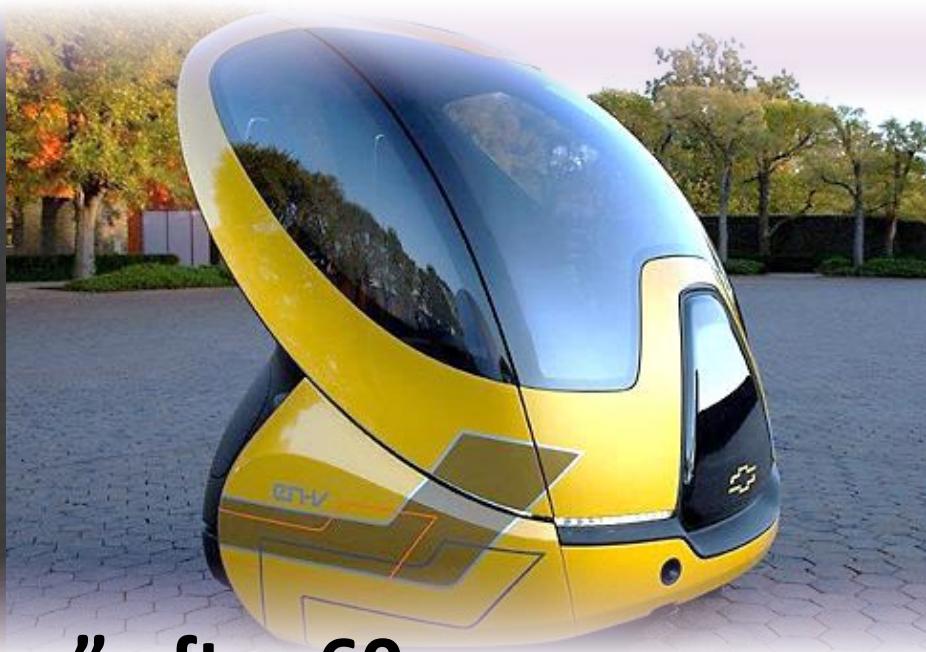
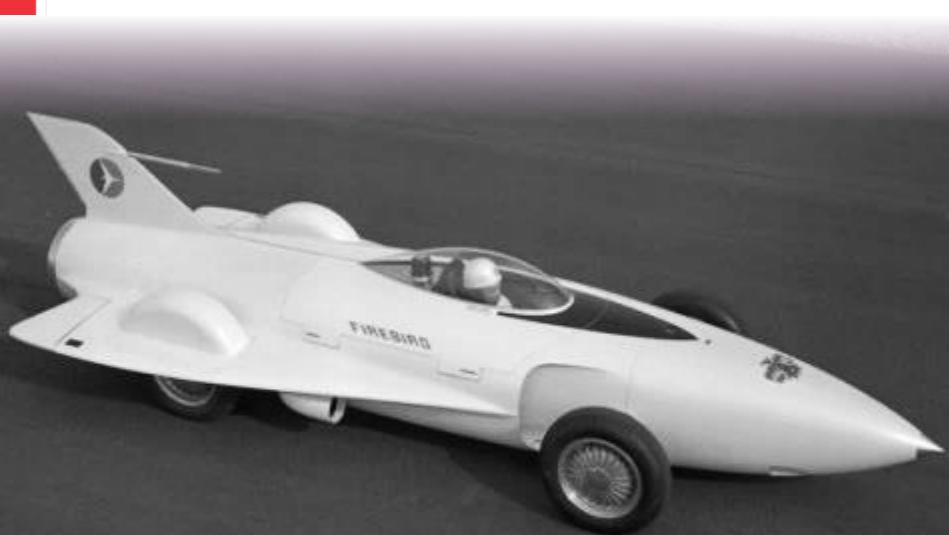
Connect Protect

Davi Ottenheimer

president  
flyingpenguin  
@daviottenheimer



# Where's My Automated Exo-Skeleton?



Still “Coming Soon” after 60 years

1954 FIREBIRD — 2014 en-v



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# Does the Lack of Cyber Ethics Framework Stand in Our Way?

- Improve the world, not repeat it; science to deal with promotion and preservation of security
- Conditions and practices to promote or preserve security
  - “Tools” must be properly treated, used & controlled
  - Only applied to appropriate circumstances
  - Responsibility (authentic, authorized, accountable)





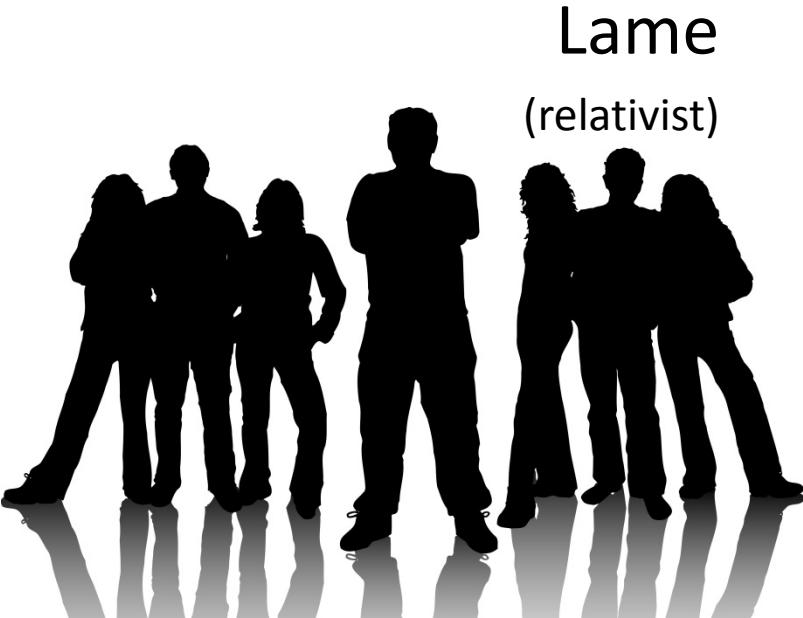
# Avoiding Fallacy Games



Shame  
(ad hominem)



Fame  
(appeal to authority)



Lame  
(relativist)



# Labor (Cost) Framework for Analytics

## ERM

- Easy
- Routine
- Minimal Judgment



Compliance Driven

## ISEA

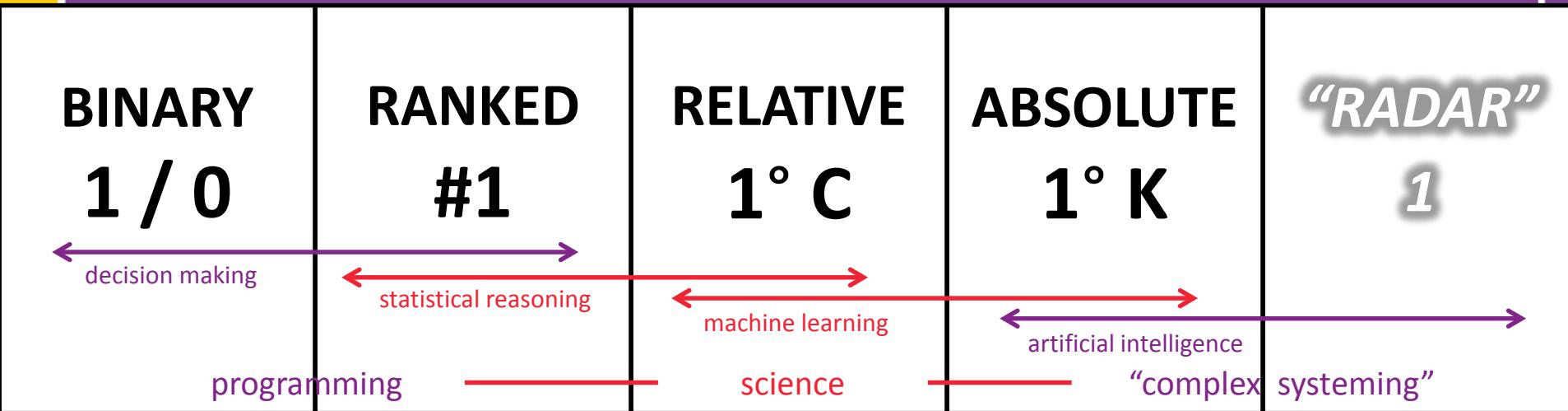
- Identify
- Store
- Evaluate
- Adapt



Hypothesis Driven



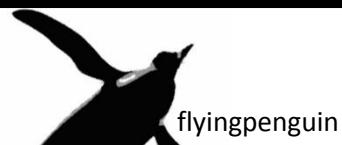
# Evolutionary Framework for Analytics



**PRIVACY**  
(hide the past)



**KNOWLEDGE**  
(predict the future)



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**“RADAR”**



# TRUST



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# IN



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# AUTHORITY



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# FOR



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# AUTOMATION



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... “AUTHORIMATION”



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# London Evolution of Safety Analytics





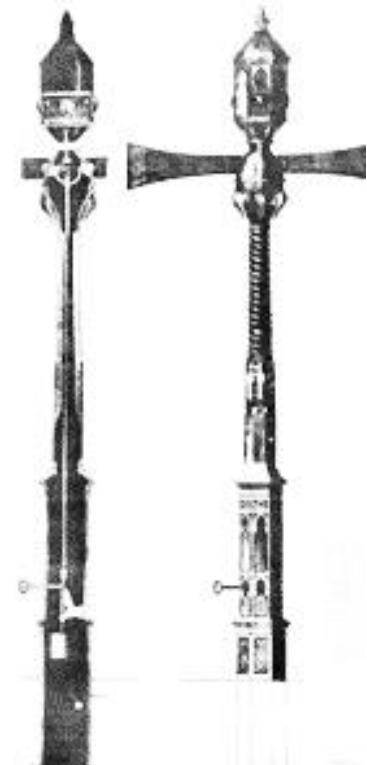
# London Evolution of Safety Analytics

## Traffic Control Towers 1869

**“Put constable on high stand so all could be aware ‘eye of the governor’ upon them”**

- Lever for constable to adjust and control flow
- Horizontal arm down 30 seconds every 5 minutes
- **Red** and **green** lights at night powered by gas

<https://books.google.com/books?id=9MpR4Yc41t0C&pg=PA35>

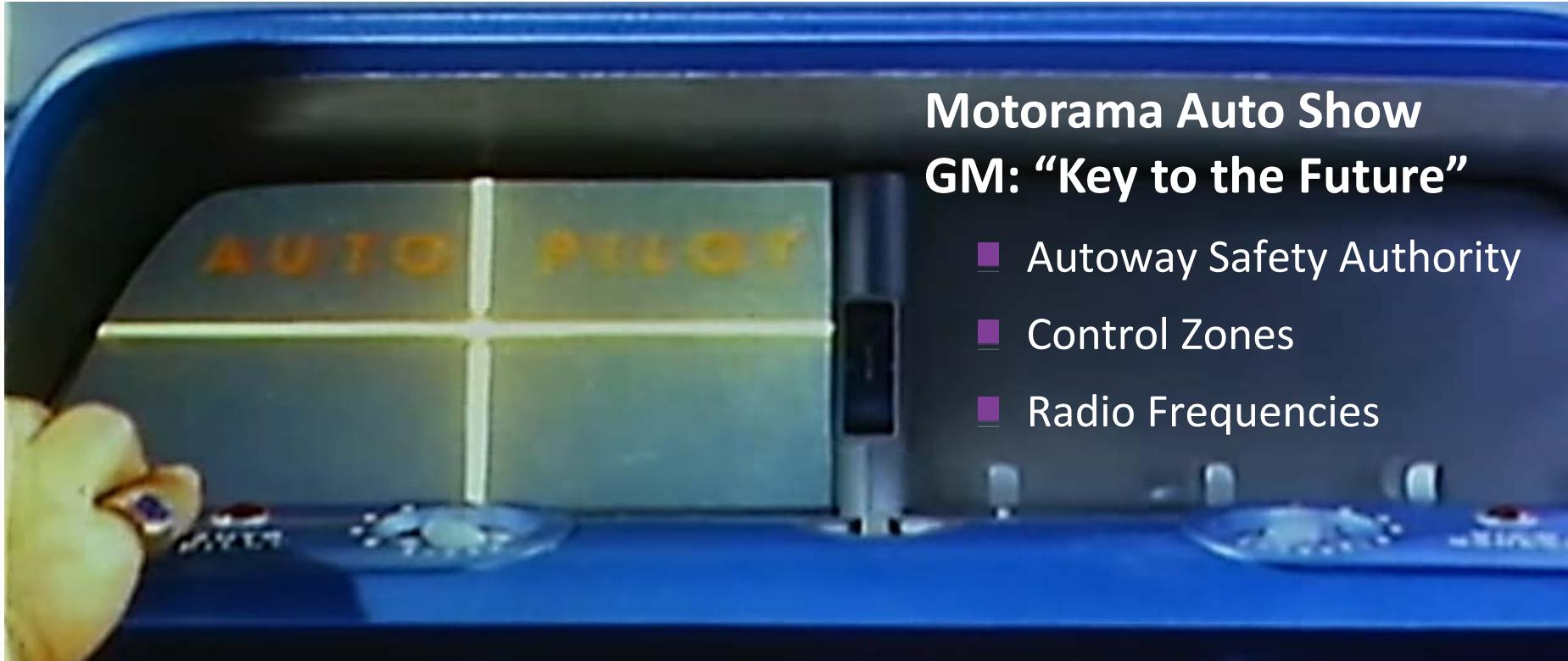




# 1956 Automation: “Self-driving cars by 1976”

## Motorama Auto Show GM: “Key to the Future”

- Autoway Safety Authority
- Control Zones
- Radio Frequencies





# 1957 Automation



## ELECTRICITY MAY BE THE DRIVER.

“One day your car may speed along an electric super-highway. Its speed and steering automatically controlled.... Travel will be more enjoyable. Highways will be made safe – by electricity! No traffic jams ... no collisions ... no driver fatigue.”

America's Independent Electric Light and Power Companies



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# 1959 Automation

“At Ford, Robert McNamara leads a new generation of management”

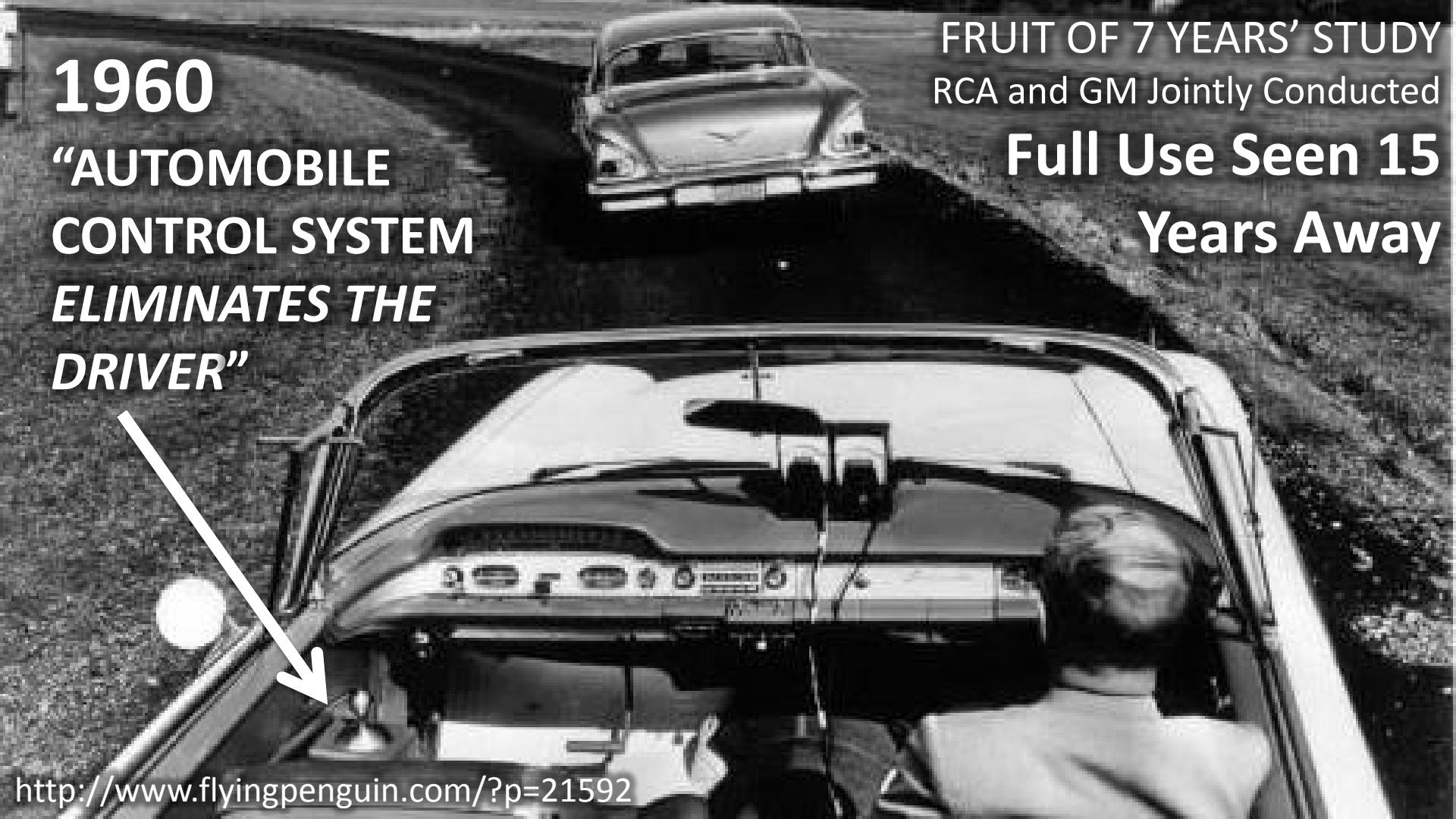


1960

"AUTOMOBILE  
CONTROL SYSTEM  
*ELIMINATES THE  
DRIVER*"

FRUIT OF 7 YEARS' STUDY  
RCA and GM Jointly Conducted

Full Use Seen 15  
Years Away



**1960**

**President Kennedy appoints  
President McNamara of the Ford Motor Company  
to Secretary of Defense**





# FREEDOM



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# FROM



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# WANT



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# AND



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# FEAR

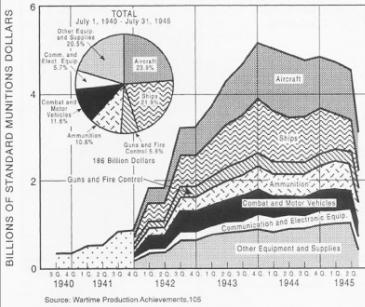


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### U.S. MUNITIONS PRODUCTION

Average Monthly Rate, by Quarters, July 1, 1940 - July 31, 1945



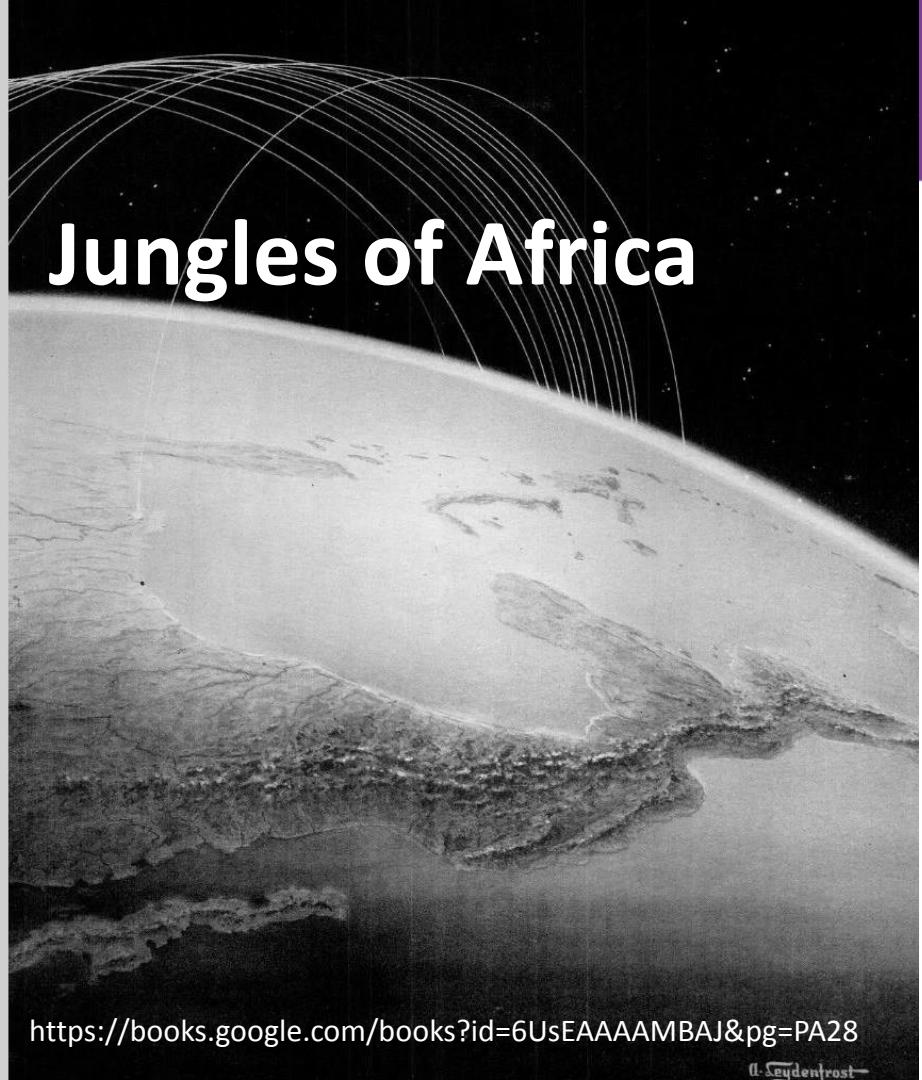
# 1945 Rational Automation as Power



# Automation...? 1945 Nukes From



# Jungles of Africa





# America On the Road to Driverless Cars



1956



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1957

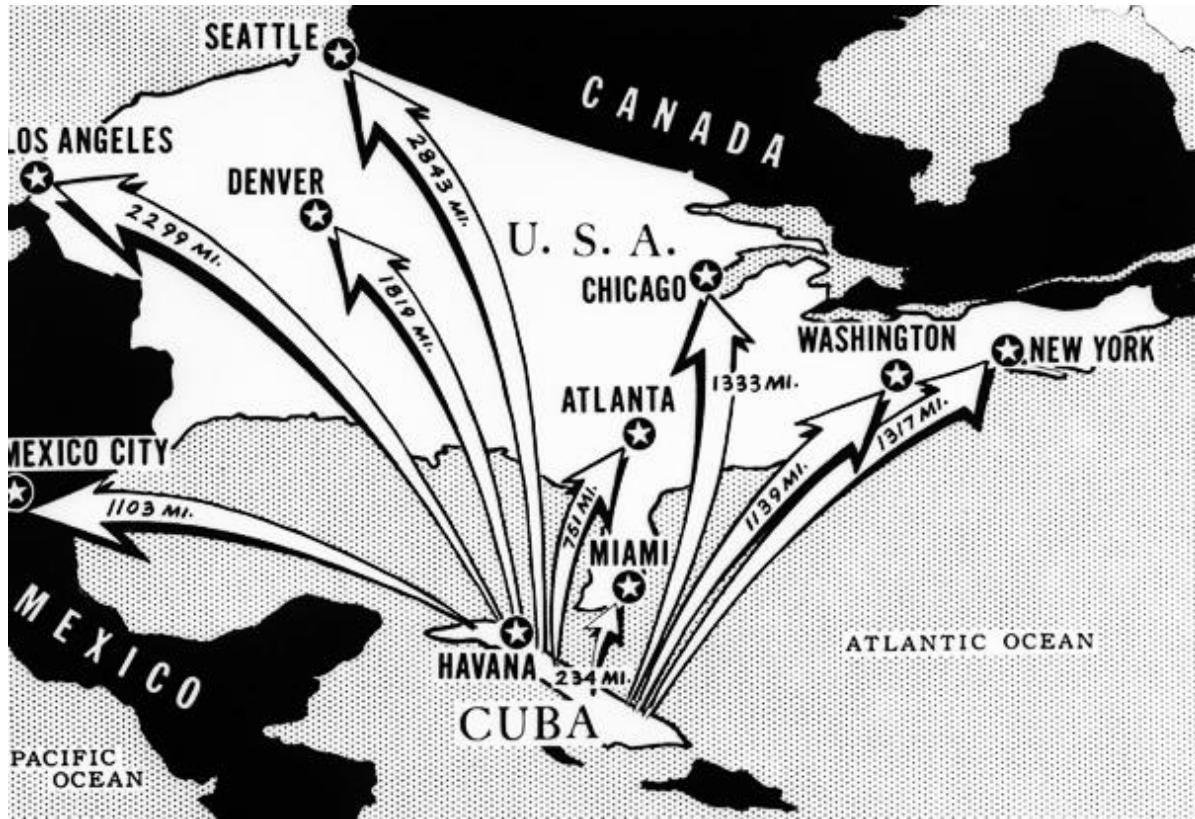


1960

# Sudden Power Reality: Cuban Missile Crisis



1962



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# ERM Solution: Strike Now, Hit First!



## USAF Chief of Staff General LeMay

1. War inevitable with Soviet Union
2. US has early nuclear advantage
3. Fewer casualties sooner we launch strike
4. The American public wants a strike

Therefore...





# Rational “Purist” Authorimation



**“There are no innocent civilians. It is their government and you are fighting a people, you are not trying to fight an armed force anymore.”**

**So it doesn't bother me so much to be killing the so-called innocent bystanders.”**

– USAF General LeMay

<https://books.google.com/books?id=bcRWmE8KUDQC&pg=PA287>



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# Rational “Purist” Authorimation





# INSTEAD



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# WE



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# GOT



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# LUCKY



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# Security Evolves. Can We Listen?

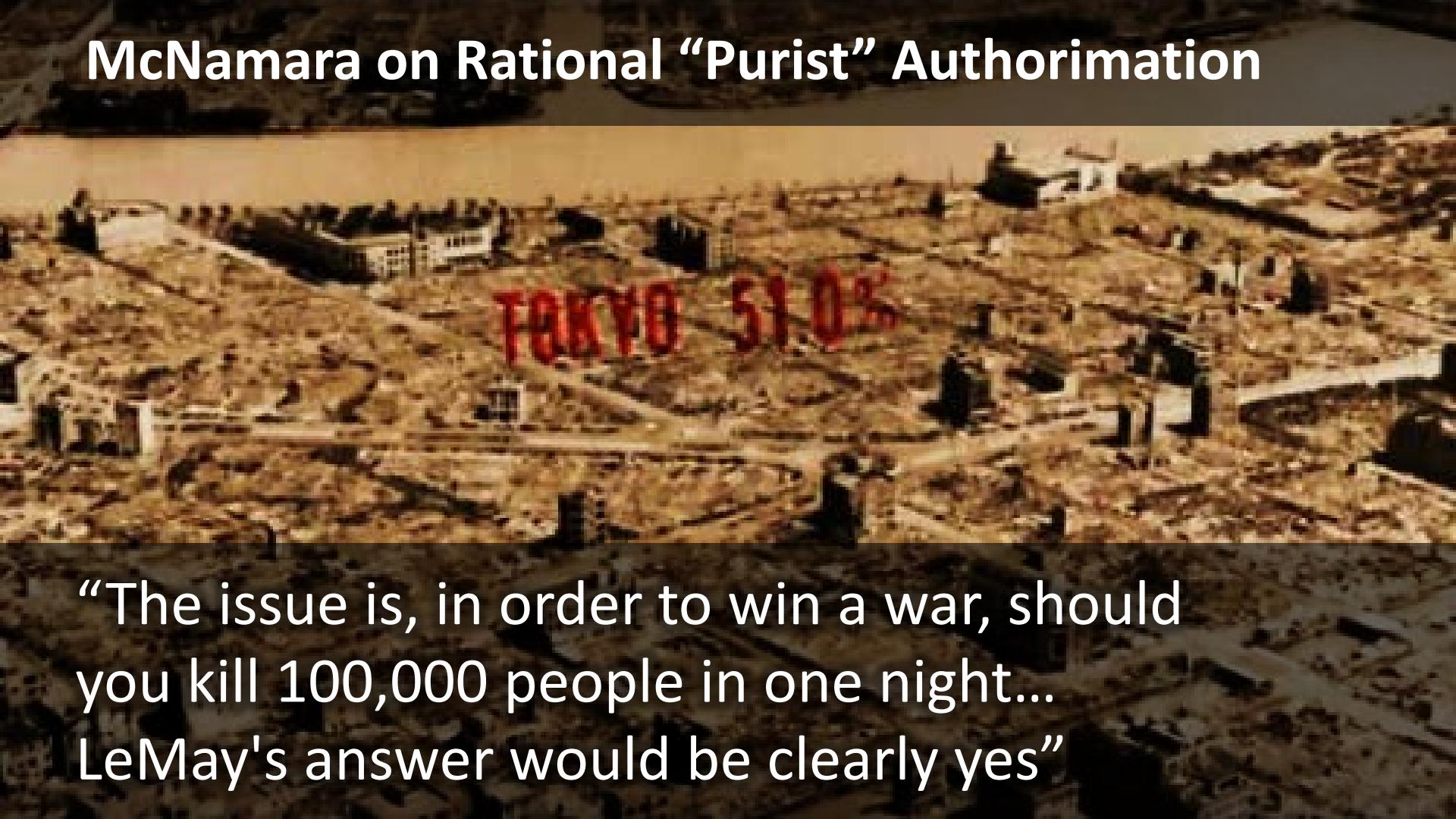


LeMay was ***totally intolerant of criticism.*** He ***never engaged in discussion*** with anyone.



The Fog of War: Eleven Lessons from the Life of Robert S. McNamara (2003)  
<https://www.youtube.com/watch?v=SfPwR00HXM0>

# McNamara on Rational “Purist” Authorimation

An aerial photograph of a city in ruins, showing extensive damage to buildings and infrastructure. Overlaid on the center of the image is the text "TOKYO 5108" in large, bold, red letters.

TOKYO 5108

“The issue is, in order to win a war, should you kill 100,000 people in one night... LeMay's answer would be clearly yes”



# Digital Cluster Bombs?

**“In most cases, failure rate of 0.008% would be great...”**

However, even 0.008 percent of the Pakistani population still corresponds to 15,000 people potentially being misclassified as ‘terrorists’...”



<http://arstechnica.co.uk/security/2016/02/the-nsas-skynet-program-may-be-killing-thousands-of-innocent-people/>

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## #2 “Rationality Will Not Save Us”

- **Castro knew of the missiles & he recommended their use**

Khrushchev: “United States and we would have mutually exterminated each other”

- **Humanity saved us from total destruction**

McNamara: “I want to say – and this is very important – at the end we lucked out. It was luck that prevented nuclear war. We came that close to nuclear war at the end. **Rational individuals: Kennedy was rational;**

**Khrushchev was rational;** Castro was rational. Rational individuals came that close to total destruction of their societies. **And that danger exists today.”**

<http://www.cubanmissilecrisis.org/lessons/lessons-from-policymakers/>





# “Rationality Will Not Save Us”

Kennedy was rational; Khrushchev was rational; Castro was rational

Rational individuals came that close  
to total destruction of their societies

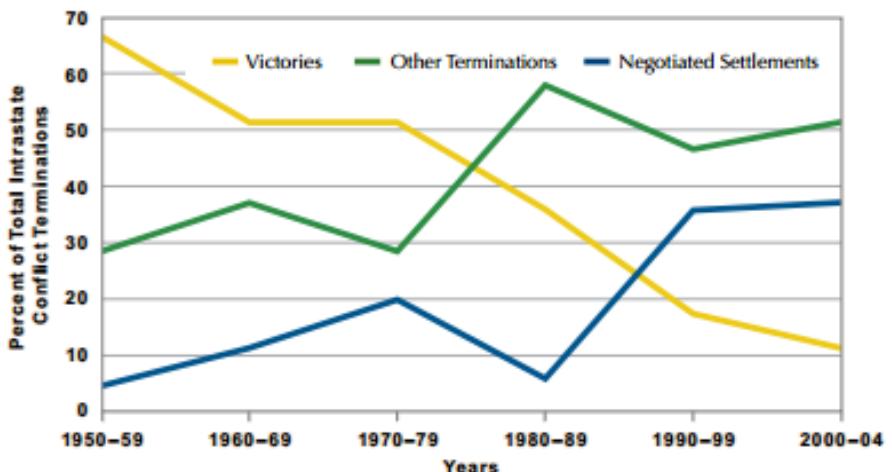
*And that danger exists today*





# Compromise (Adapt) or Die?

Figure 6.4 The Shift in How Intrastate Conflicts End, 1950–2004



“...debates have lionized threats and confrontation and ***minimized realistic compromise.***



[We] need to remember that the ever steely-eyed JFK found a compromise solution to the Cuban missile crisis — and the ***compromise worked.***



[http://www.hsrgroup.org/docs/Publications/HSR2012/HSRP2012\\_Chapter%206.pdf](http://www.hsrgroup.org/docs/Publications/HSR2012/HSRP2012_Chapter%206.pdf)

<http://www.flyingpenguin.com/?p=19002>

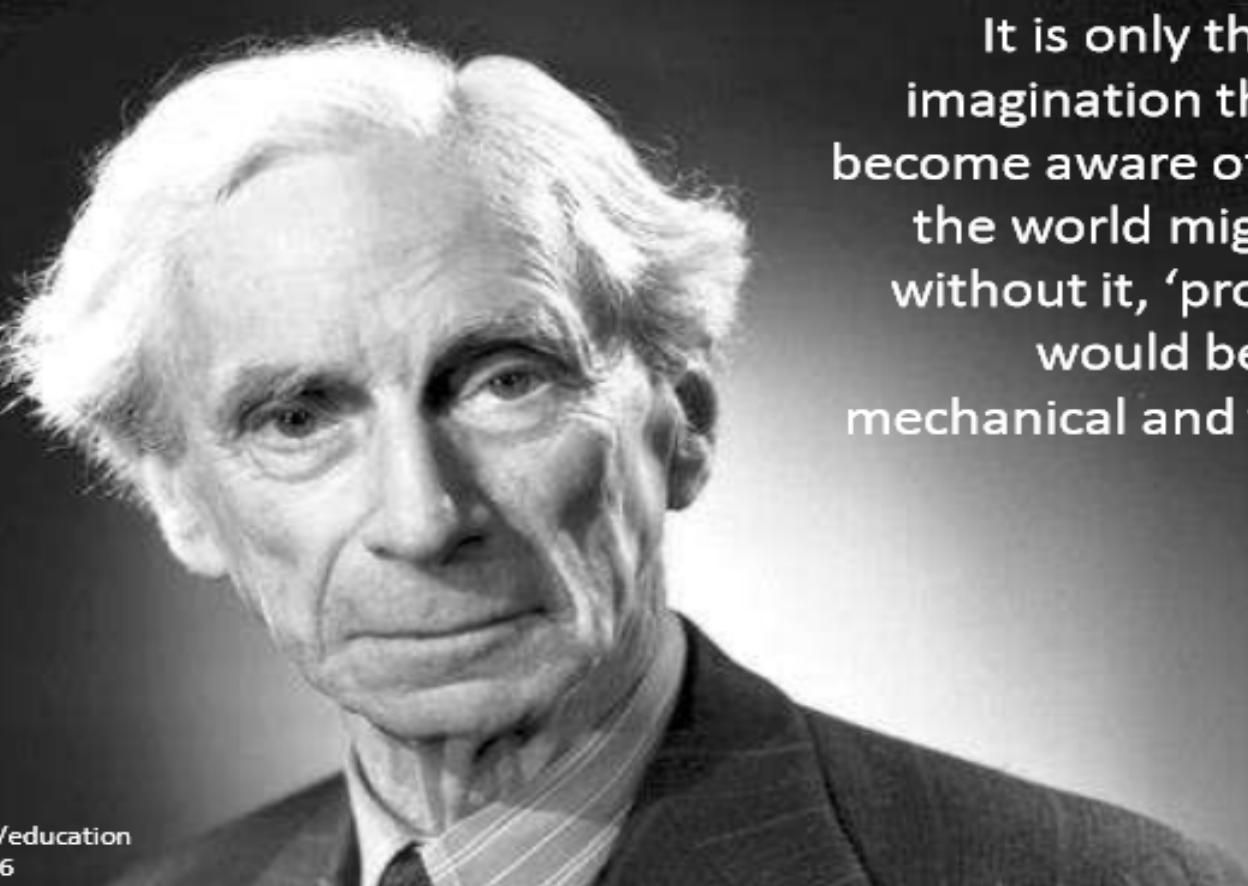
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# Example: *Healthy Rational Balance*

1

Without  
physics and  
physiology and  
psychology, we  
cannot build  
the new world.



It is only through  
imagination that we  
become aware of what  
the world might be;  
without it, 'progress'  
would become  
mechanical and trivial.

2



# Example: *Unhealthy Rational Bias*

- Check-the-box and compliance driven candidates are not a fit at Facebook
- Articulate security requirements clearly and factually
- Be able to demonstrate the importance of a requirement via real world examples or data while avoiding theoretical or hypothetical arguments



Karl  
@supersat  
Facebook delayed showing me a friend's suicide note because their newsfeed algorithm thought it wasn't relevant.

1:21 PM - 6 Feb 2016

Rich Seymour  
@rseymour  
@supersat by the same algo I was sent into paroxysms of grief over the loss of two friends repeatedly over weeks due to relevance. ❤️



No Compliance



No Compromises



No Hypothesis



<https://www.facebook.com/careers/jobs/a01200000I9ob8EAB/>  
<https://twitter.com/supersat/status/696081183495446528>



# Evolution in Rationality

1169

Someone  
Else's  
Definition  
of Good



Face (Authoritarian Tautology) Book

Vague  
Theories  
About Bad

1869

Go

Yield

2016

*Commonly*  
Accepted  
as Good

Analysis Required Based on Knowledge

*Commonly*  
Thought of  
as Bad

BINARY	RANKED	RELATIVE	ABSOLUTE	"RADAR"
1 / 0	#1	1° C	1° K	1



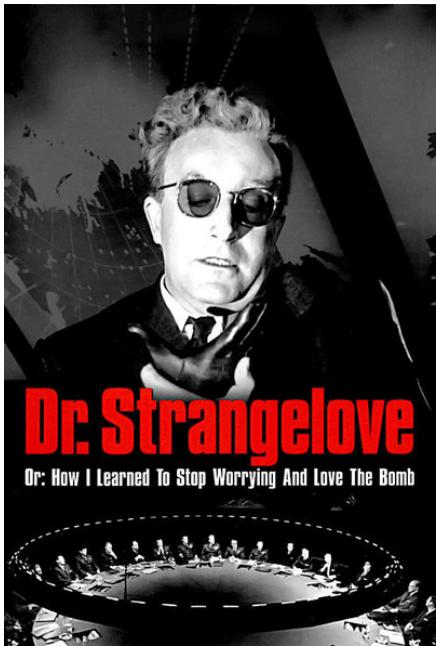
# Common Thought = “Rational Monsters”

## The Utility of Hypothetical Arguments

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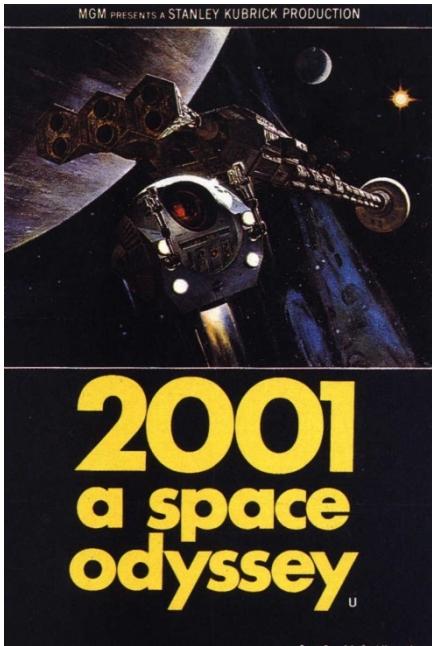
LeMay 1962: “American public wants us to strike”



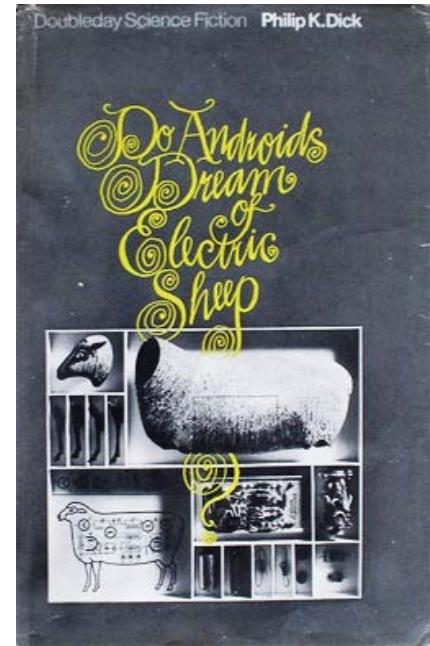
1964



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1968



1968

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# WHAT



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# DOES



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BINARY

1 / 0

RANKED

#1

RELATIVE

1° C

ABSOLUTE

1° K

“RADAR”

1

# EVOLVED (ADAPTIVE)

PRIVACY

KNOWLEDGE



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# SECURITY



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# LOOK



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# LIKE?

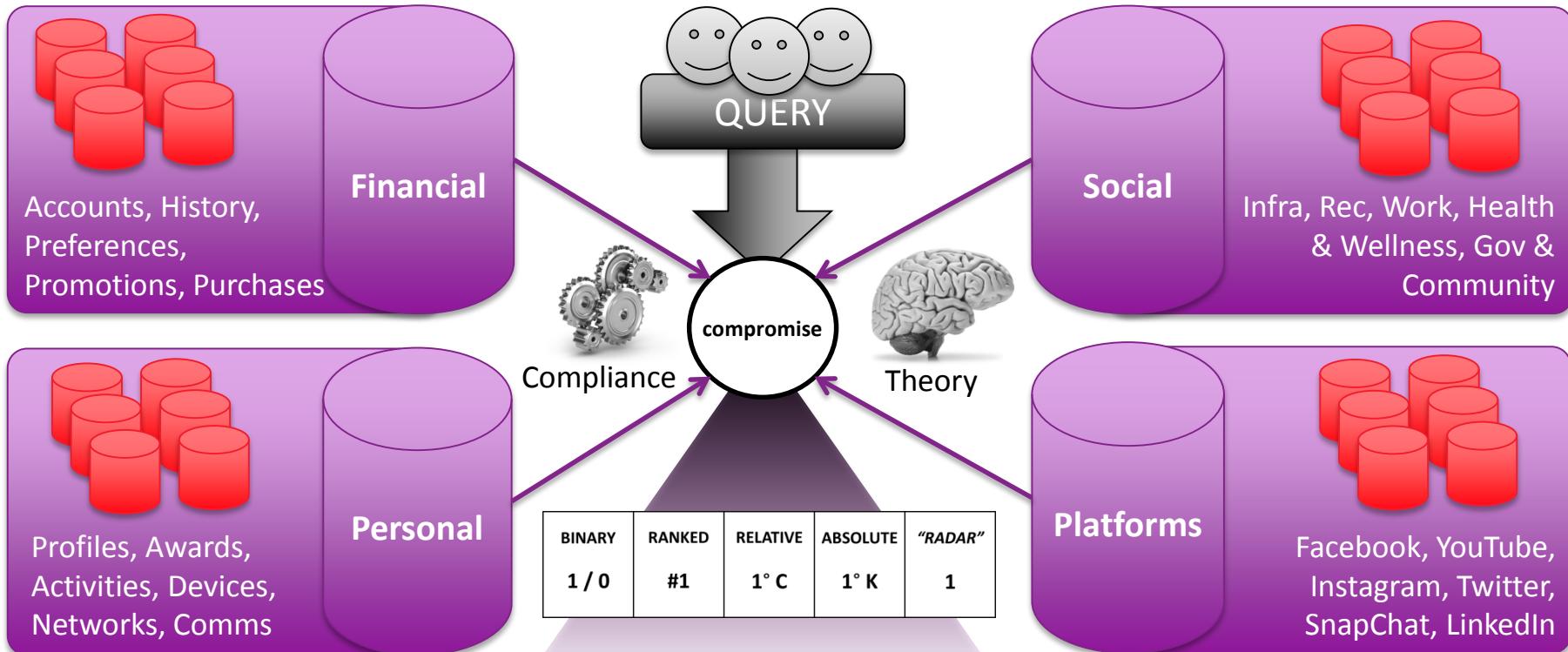


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# SAFE LEARNING/INTEL ENGINES





# AUTOMATION



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# TOOLS



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# ENHANCED



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# WITH



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# HUMAN



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# AUTHORITY



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# BRING



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# FREEDOM



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# FROM



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# WANT AND FEAR



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# Cyber Ethics Framework As Evolutionary Guide Forward

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**“expecting deep learning to evolve into a human-like brain is like waiting for airplanes to fly with feathers”**



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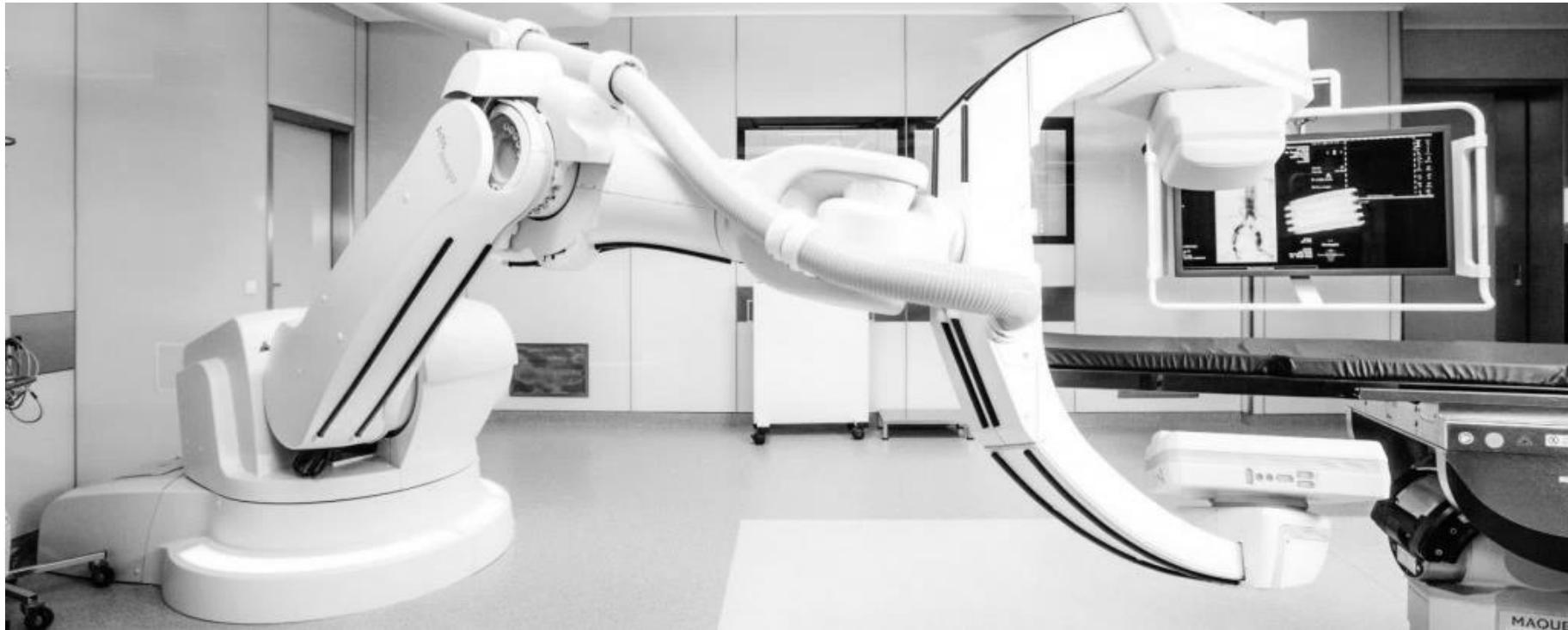
# Cyber Ethics Framework As Evolutionary Guide Forward

- Improve the world, not repeat it; science to deal with promotion and preservation of security
- Conditions and practices to promote or preserve security
  - “Tools” must be properly treated, used & controlled
  - Only applied to appropriate circumstances
  - Responsibility (authentic, authorized, accountable)





# Healthcare



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# Energy



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# Los Angeles 'Automation' Vehicles

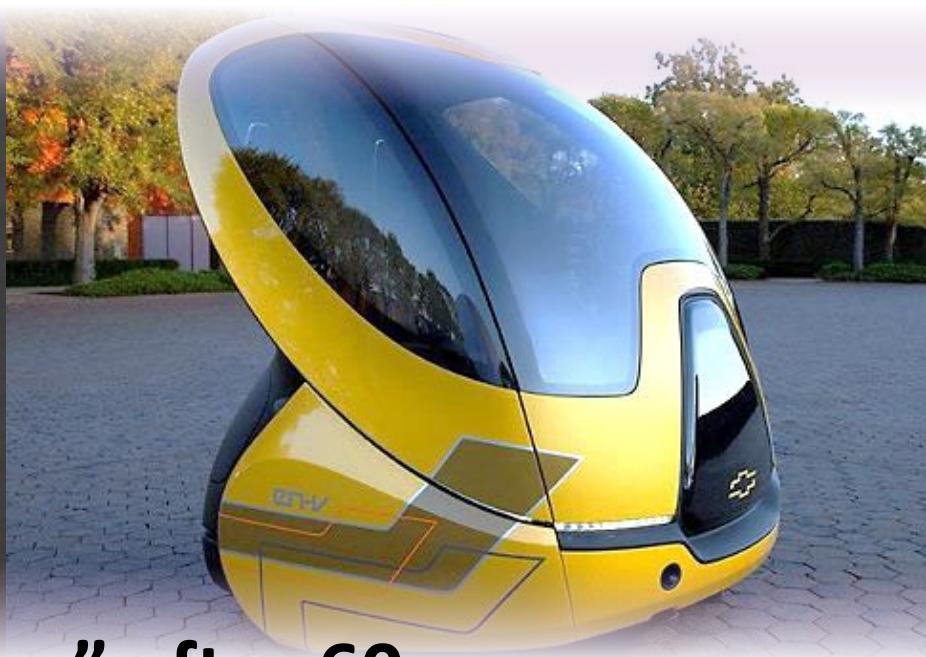
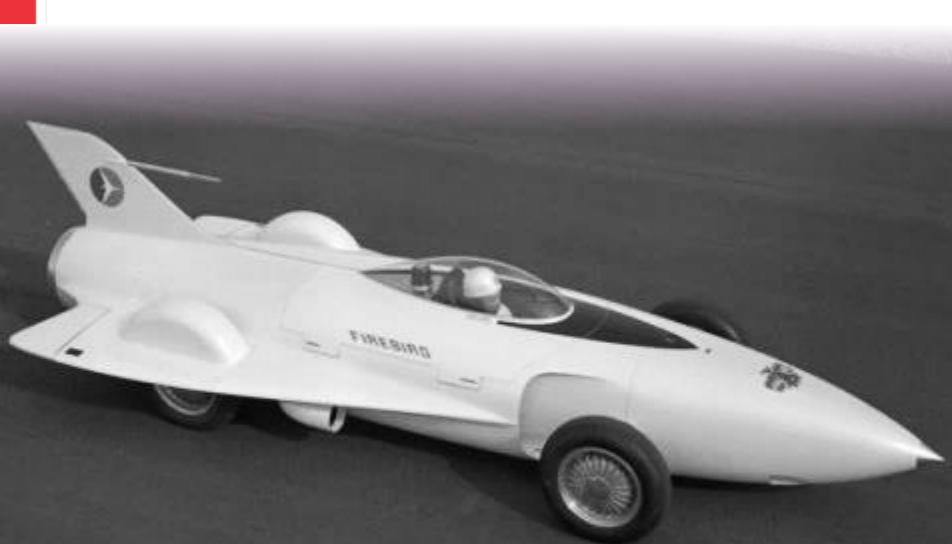


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# Transportation



Still “Coming Soon” after 60 years

1954 FIREBIRD — 2014 en-v



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# DAR-WIN or LOSE: the Anthropology of Security Evolution



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Connect Protect

Davi Ottenheimer

president  
flyingpenguin  
[@daviottenheimer](https://twitter.com/daviottenheimer)



## HIRING THE UNHIREABLE

A Rational Imperative For  
Protecting Networks & Nations

BY WINN SCHWARTAU

A politically incorrect (yet correct)  
view on how to find and  
keep the *right* people to defend  
networks and nation.



Connect Protect

**Winn Schwartau**

Founder, CEO, The Security  
Awareness Company

@WinnSchwartau



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17 June 1969



#RSAC



1969

# 17 June 1969



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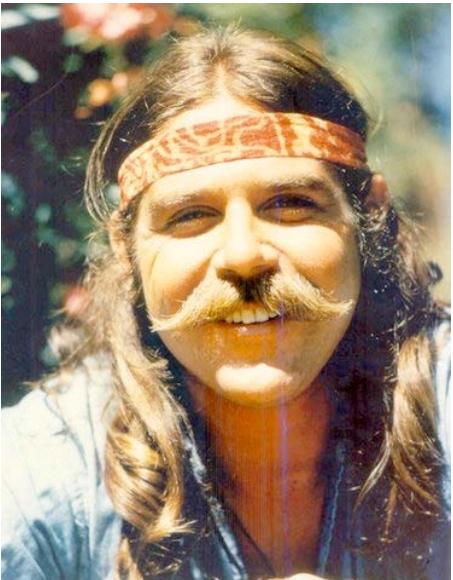
Across the street from AT&T



The Only Big Computer Company



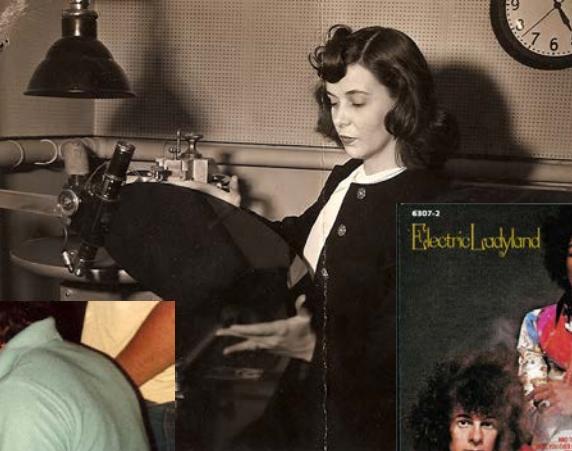
# 18 June 1969





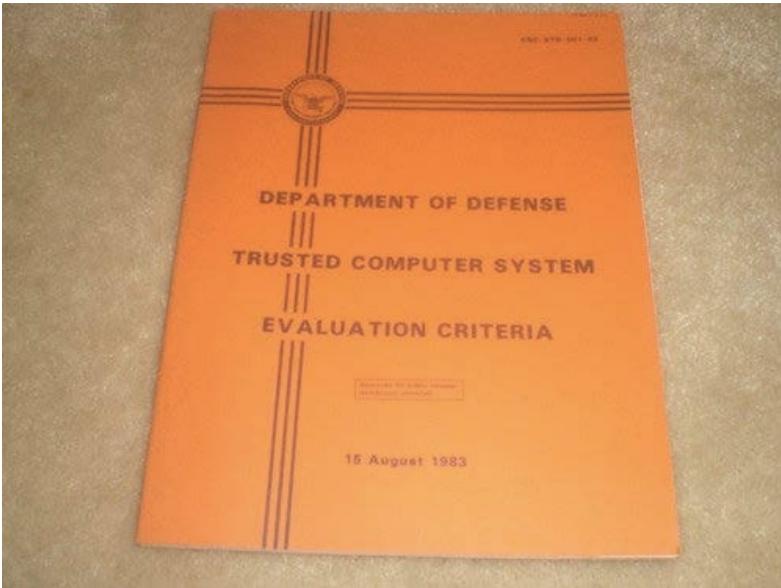
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# 20 June 1969: Went into the family business





# 7 January 1983: Went into security



No Degree. No Certs. No Creds.

# We can't find good security people, because we are really good at...

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- Finding Ways to Say ‘No!’
- Arbitrary Discrimination
- Excluding Women & Minorities
- Deciding “We Can’t!”
- Reactionary Knee Jerks
- Being Overly Cautious
- Passing the Buck / Laying Blame
- Ignoring the Obvious
- Expecting Different Results from the Same Action
- Kissing A\*\*
- Drinking the P.C. Kool-Aid



We need to get good at: Finding reasons to hire the un-hireable

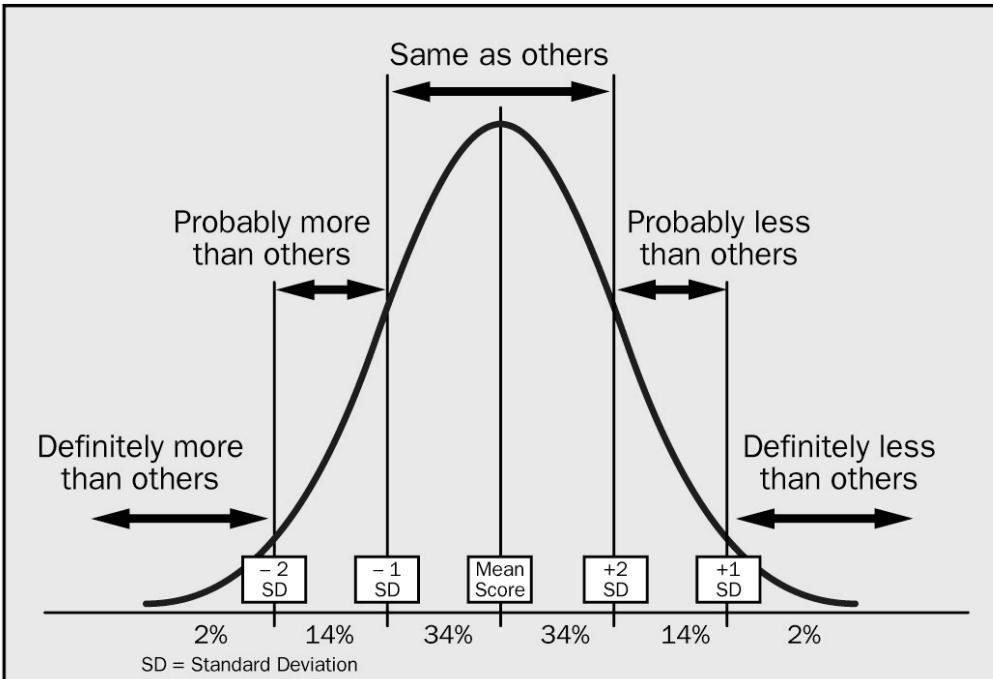
# What is normal?

Do we need normal... or extraordinary?



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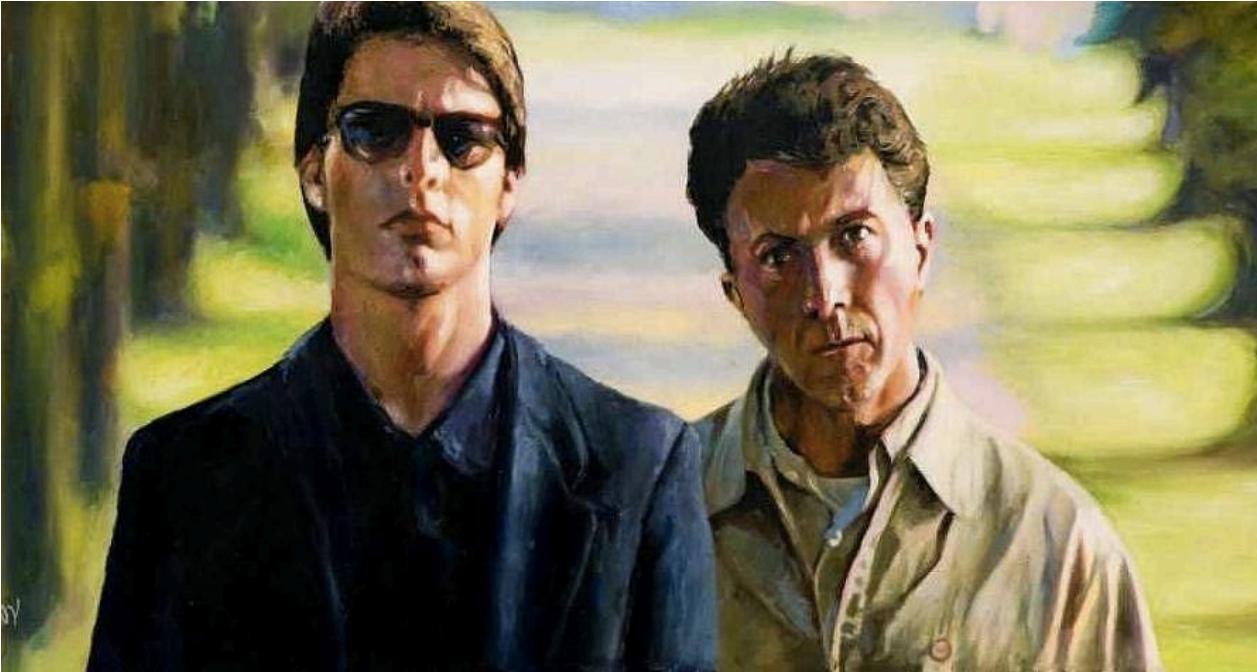
**Chart 1: Standard Distribution of Offers**



# Hire from the spectrum. We need those special skills



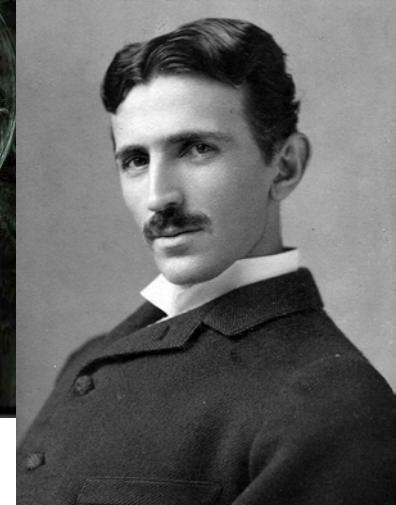
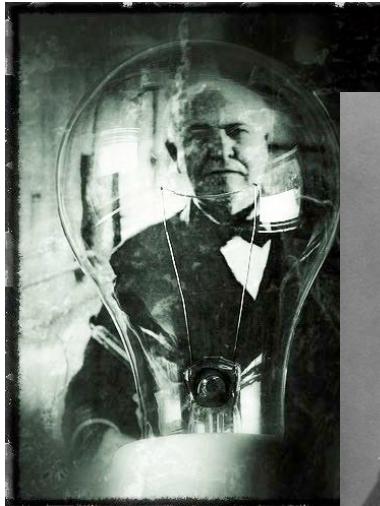
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# ADD - ADHD



- Hyper-focus
- Lack of focus
- Hyperactivity
- ~16% Kids & ~5% Adults
- 80/20 Male/Female
- 75% Genetic
- 300% likelier to start business
- Often gifted, extraordinary or savant





# Stop Drug Testing

- Alcoholism is ‘acceptable’.
- A little weed is a Federal offense.
- How does drug testing help your hiring process?
- ADHD/ADD/OCD
  - Marijuana assists
  - So does legal Methamphetamine
- “No drugs at work!”



Don’t Ask. Don’t Tell.

# Recruited by N.S.A. Debilitating ADD/ADHD drugs



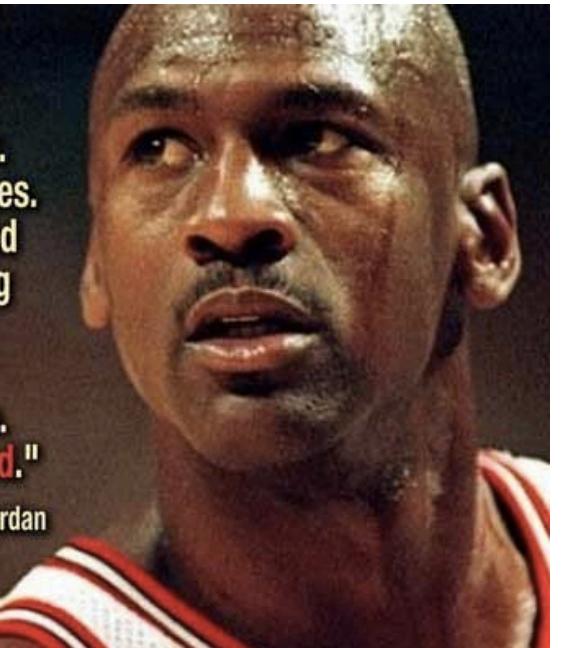
#RSAC





#RSAC

# Embrace failure



"I've missed more than 9,000 shots in my career. I've lost almost 300 games. 26 times I've been trusted to take the game winning shot and missed. I've failed over and over and over again in my life. And that is why I succeed."

~ Michael Jordan

Every Security Expert has failed many, many, times. You want that experience.



# Say “Yes!” to profiling

- #1 Look for Deception
- Background Checks?
  - Not Caught Yet
- TSA vs. El Al
- Security pros profile for a living
- Use Profiling... correctly

“Are you ever going to cheat me?”





# Periodic revetting



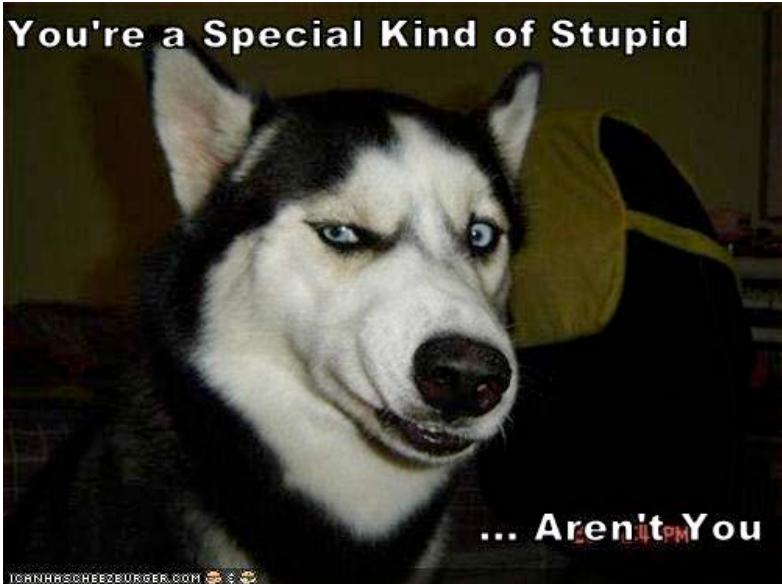
- Booze
- Cash
- Cars, House, Travel
- Revet Allegience
- Revet for Deception

# Other capricious and arbitrary discriminators



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- HR Doesn't "Like" You
- Fail An Aptitude Test
- Pregnant (Maybe)
- Anti-Tele-Commuting
- Fall Out Of The "Box" of "Normal"
- No Degree
- Too Old



# Why else we say No! to great geeks



- “I owe the IRS \$50,000...”
- “My brother is in jail...”
- “I did stupid stuff in college...”
- “I spoke out Against/For  
(pick a cause)...”
- Credit Score Too Low
- “I’m a Canadian...”



# Who's in competition for cyber security skills??



#RSAC



- MIL/GOV/
- Private Sector
- Organized Crime...
- Nation-States





# What to expect?

- Social awkwardness
- No filter on mouth
- Brutal honesty
- Forgetting to eat
- Chaos < > Overly neat
- Body Art
- Odd dress
- “No Life”



# What to give the unhireable? Fairness & a Fair Chance!



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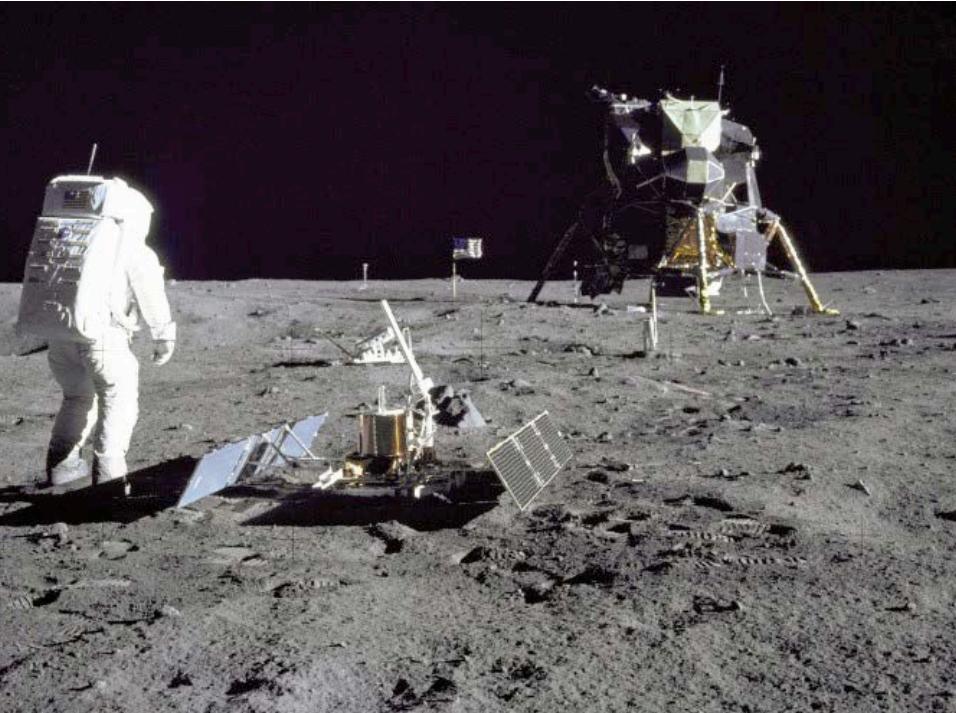
- Yes! You can own your own IP
- Yes! You can go to hackercons
- An option to criminality
- Provide hacking targets
- Access to cool technology
- Adapted environment
- Support Systems





# Defending Networks is just Too Hard

- Landing on the Moon
- Transcontinental Railway
- Marshall Plan
- Manhattan Project
- TVA
- DNA
- ICs
- Internet
- Map the Mind





# So...to get ‘the right stuff’

- Halt Arbitrary Discrimination
- People are not the same... especially the ones you need
- Create new culture
- Don’t Ask. Don’t Tell Drug Policy
- Stop Pigeon-holing and stereo-typing
- Give the geeks room on their terms

Find a Way.

IF IT IS IMPORTANT  
TO YOU, YOU WILL  
FIND A WAY.  
  
IF NOT  
YOU’LL FIND  
AN EXCUSE



Thank You.

