



DAR-WIN or LOSE: the Anthropology of Security Evolution



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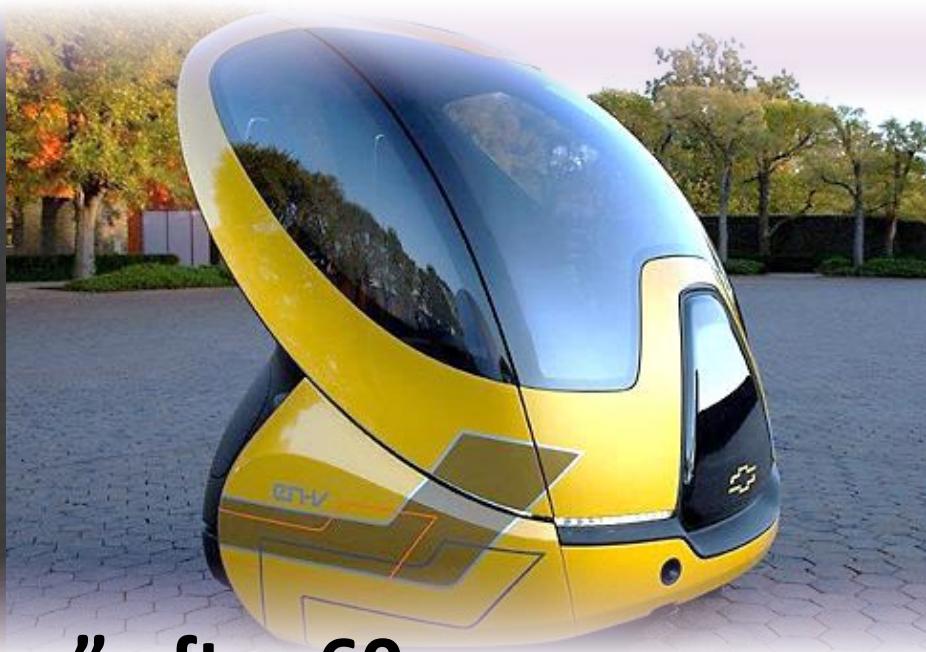
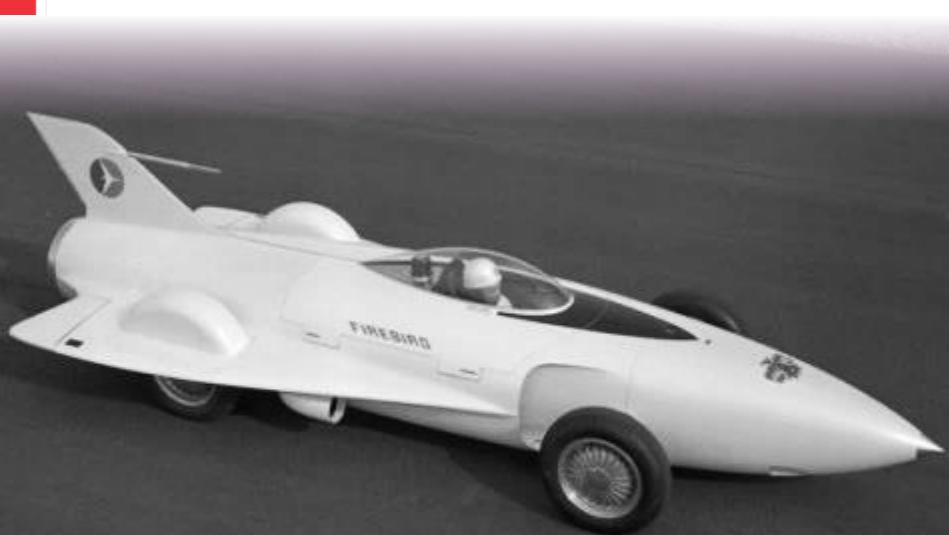
Connect Protect

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)





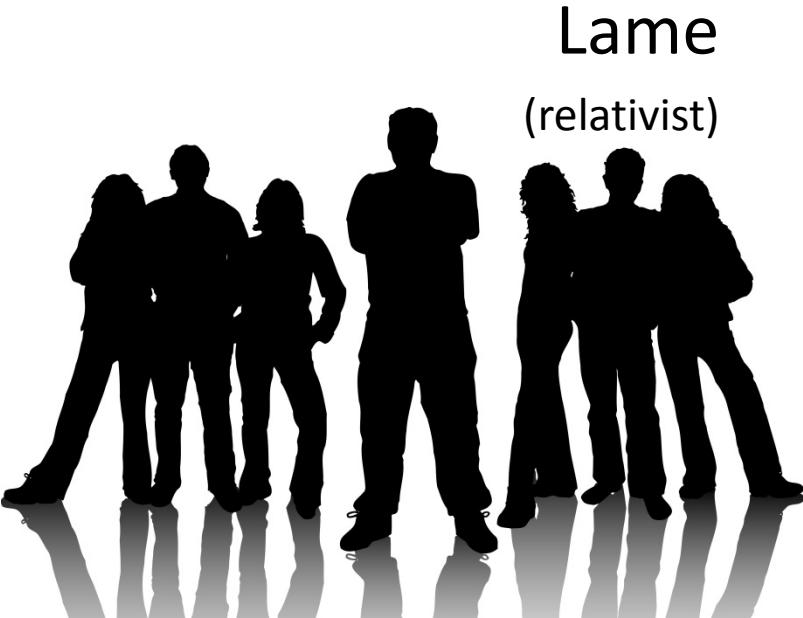
Avoiding Fallacy Games



Shame
(ad hominem)



Fame
(appeal to authority)



Lame
(relativist)



Labor (Cost) Framework for Analytics

ERM

- Easy
- Routine
- Minimal Judgment



Compliance Driven

ISEA

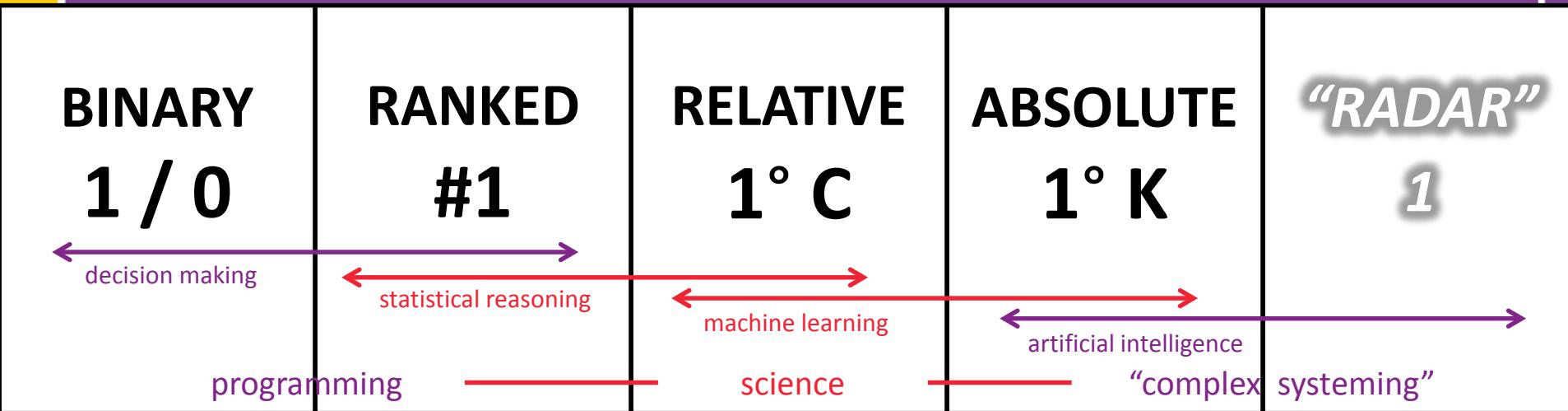
- Identify
- Store
- Evaluate
- Adapt



Hypothesis Driven



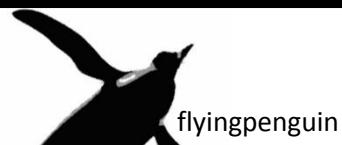
Evolutionary Framework for Analytics



PRIVACY
(hide the past)



KNOWLEDGE
(predict the future)





“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





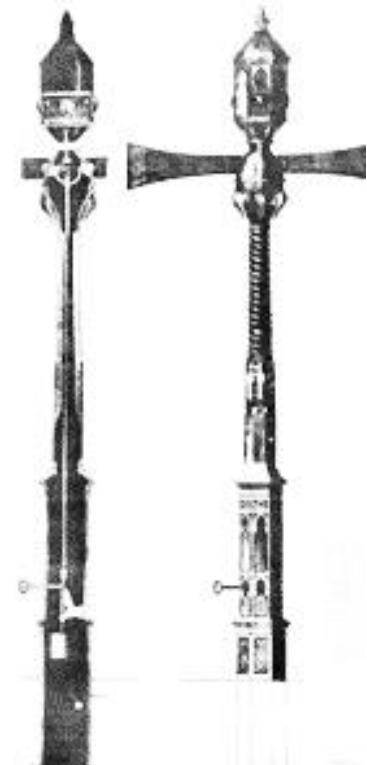
London Evolution of Safety Analytics

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>

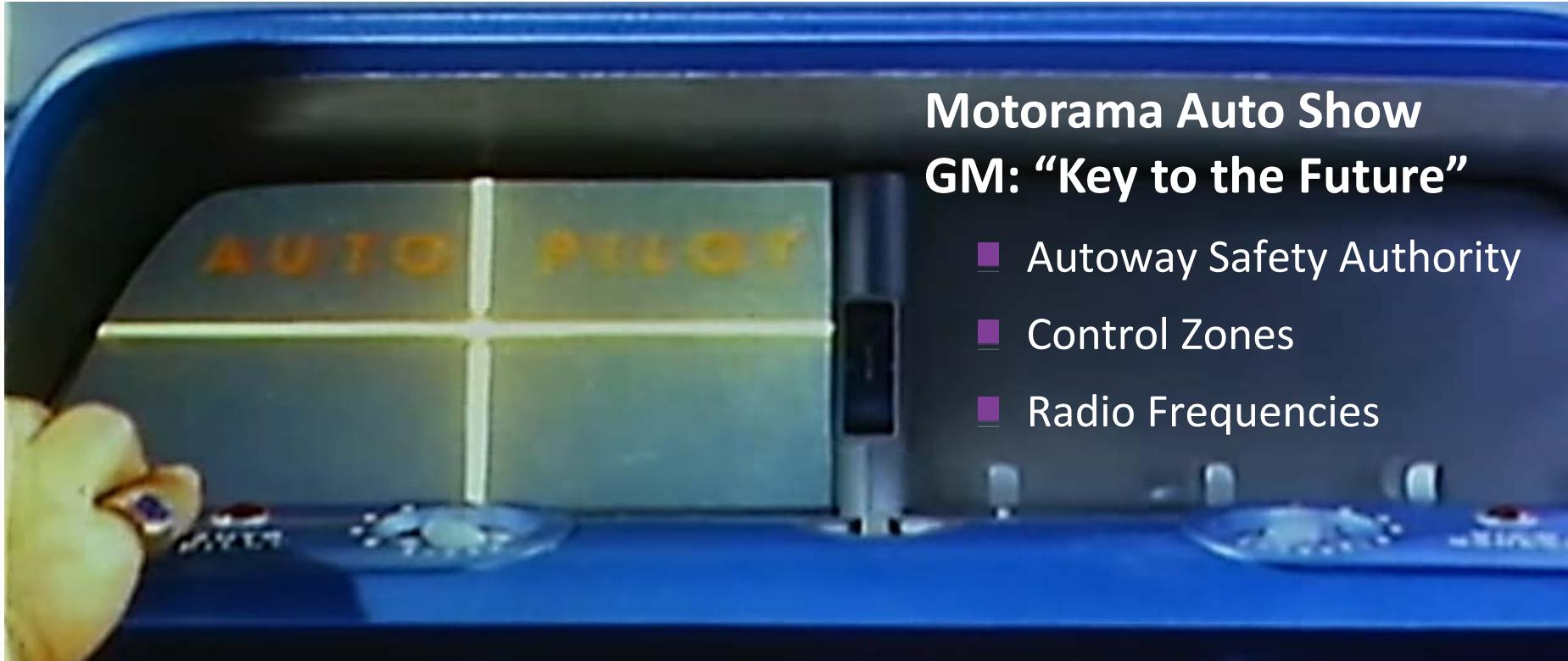




1956 Automation: “Self-driving cars by 1976”

Motorama Auto Show GM: “Key to the Future”

- Autoway Safety Authority
- Control Zones
- Radio Frequencies



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<https://www.youtube.com/watch?v=Rx6keHpeYak>

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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”

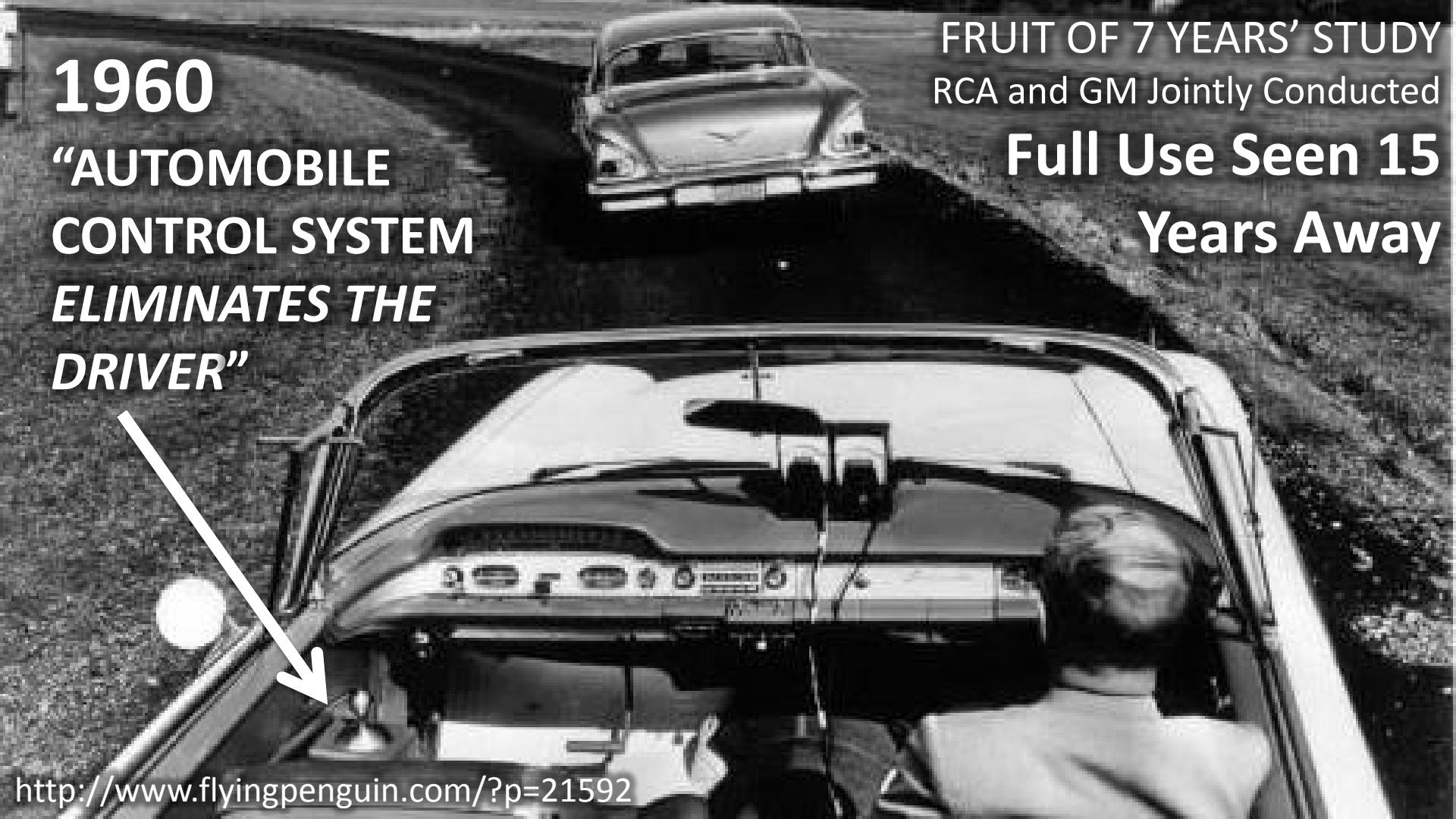


1960

"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

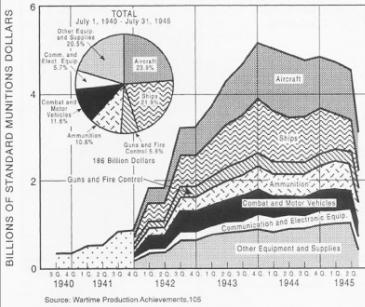


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U.S. MUNITIONS PRODUCTION

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



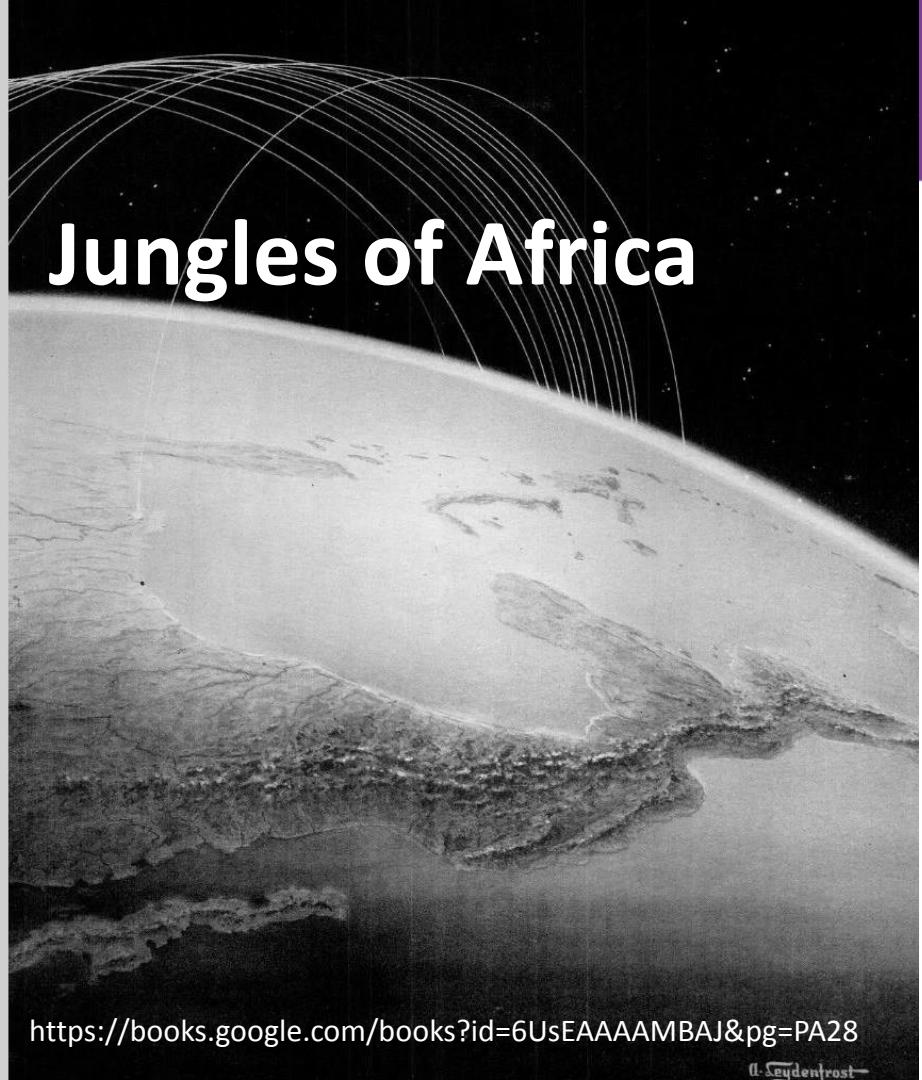
1945 Rational Automation as Power



Automation...? 1945 Nukes From

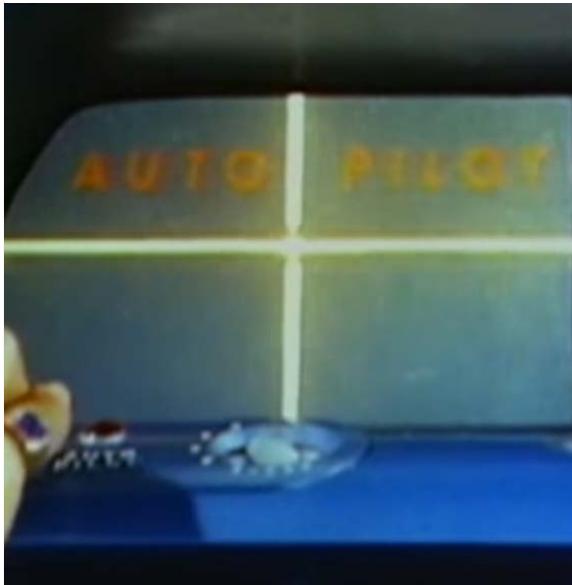


Jungles of Africa





America On the Road to Driverless Cars



1956



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1957

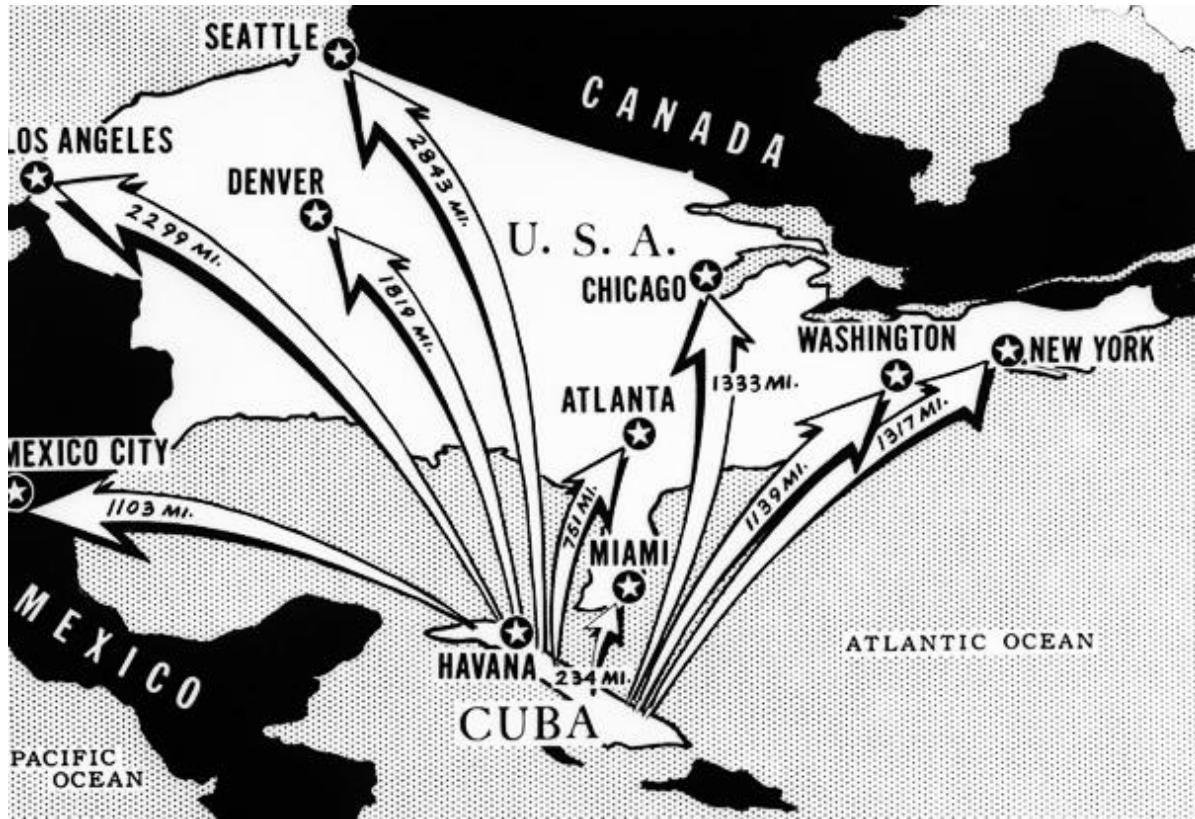


1960

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?

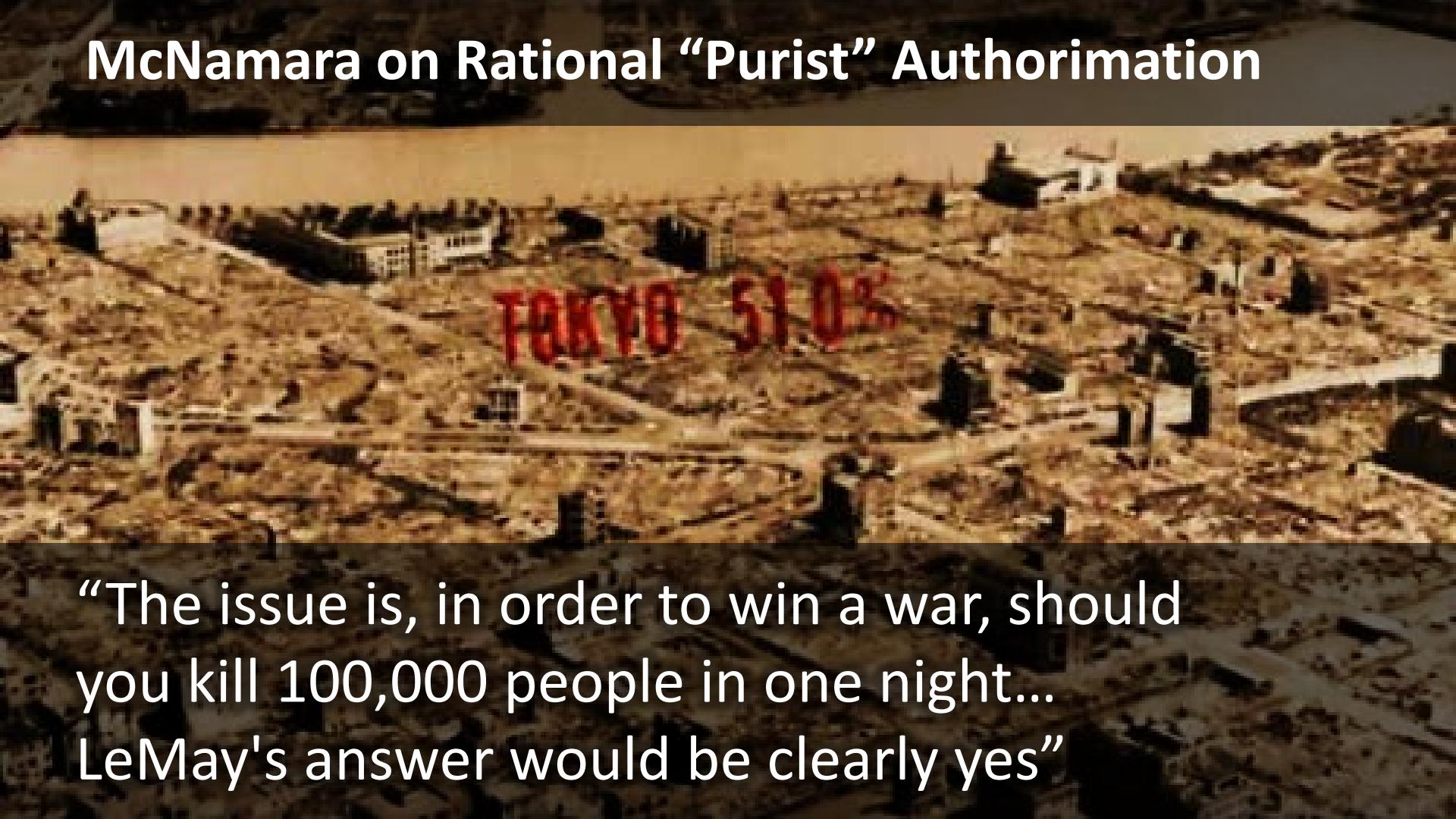


LeMay was ***totally intolerant of criticism.***
He ***never engaged in discussion*** with anyone.



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

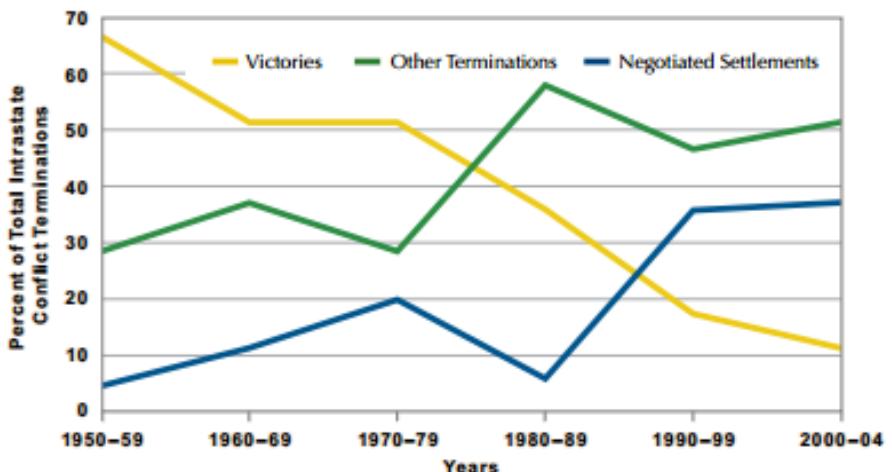


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Compromise (Adapt) or Die?

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.flyingpenguin.com/?p=19002>

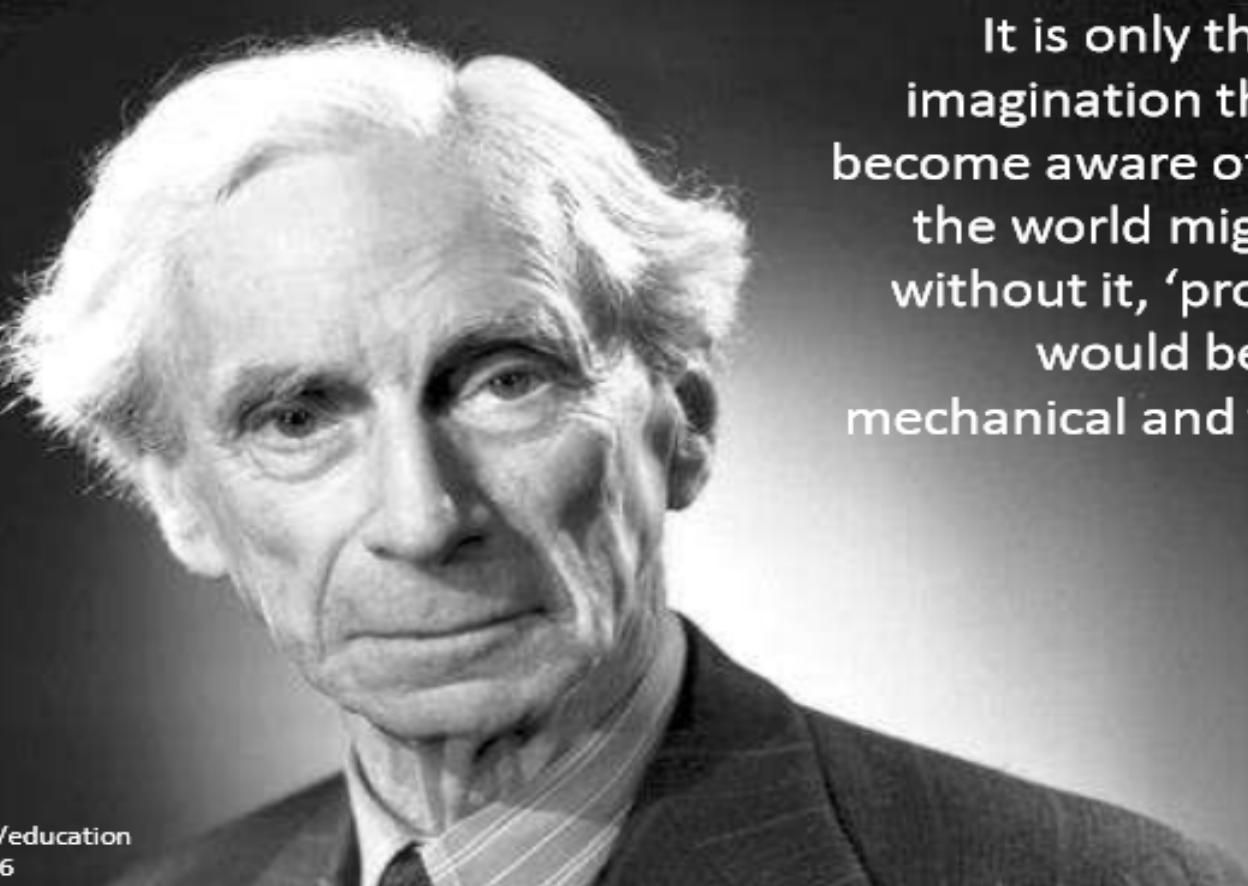
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Example: *Healthy Rational Balance*

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



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

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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



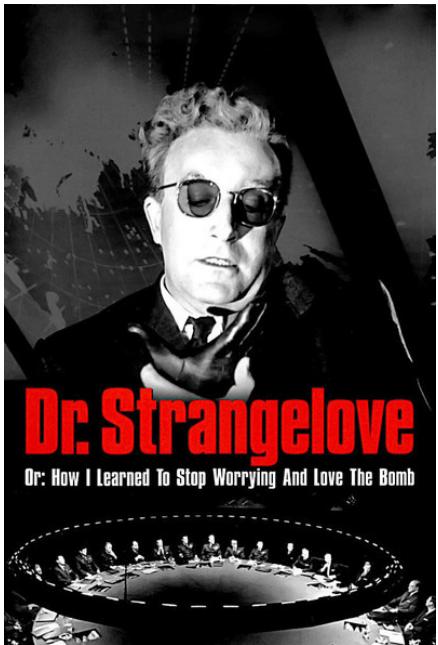
Common Thought = “Rational Monsters”

The Utility of Hypothetical Arguments

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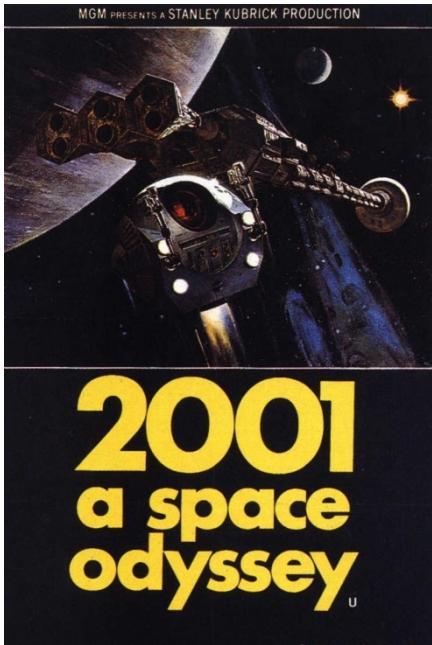
LeMay 1962: “American public wants us to strike”



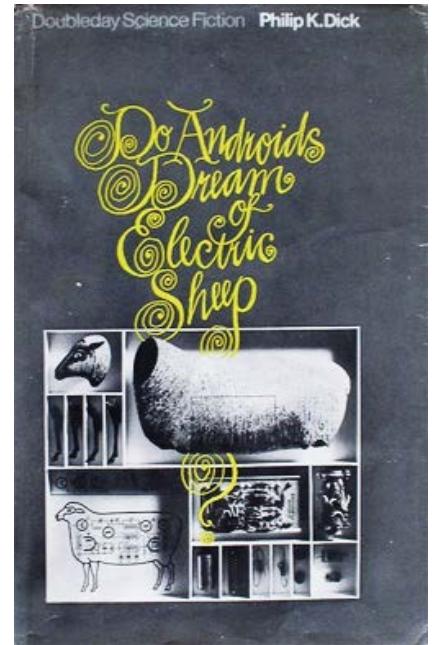
1964



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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?

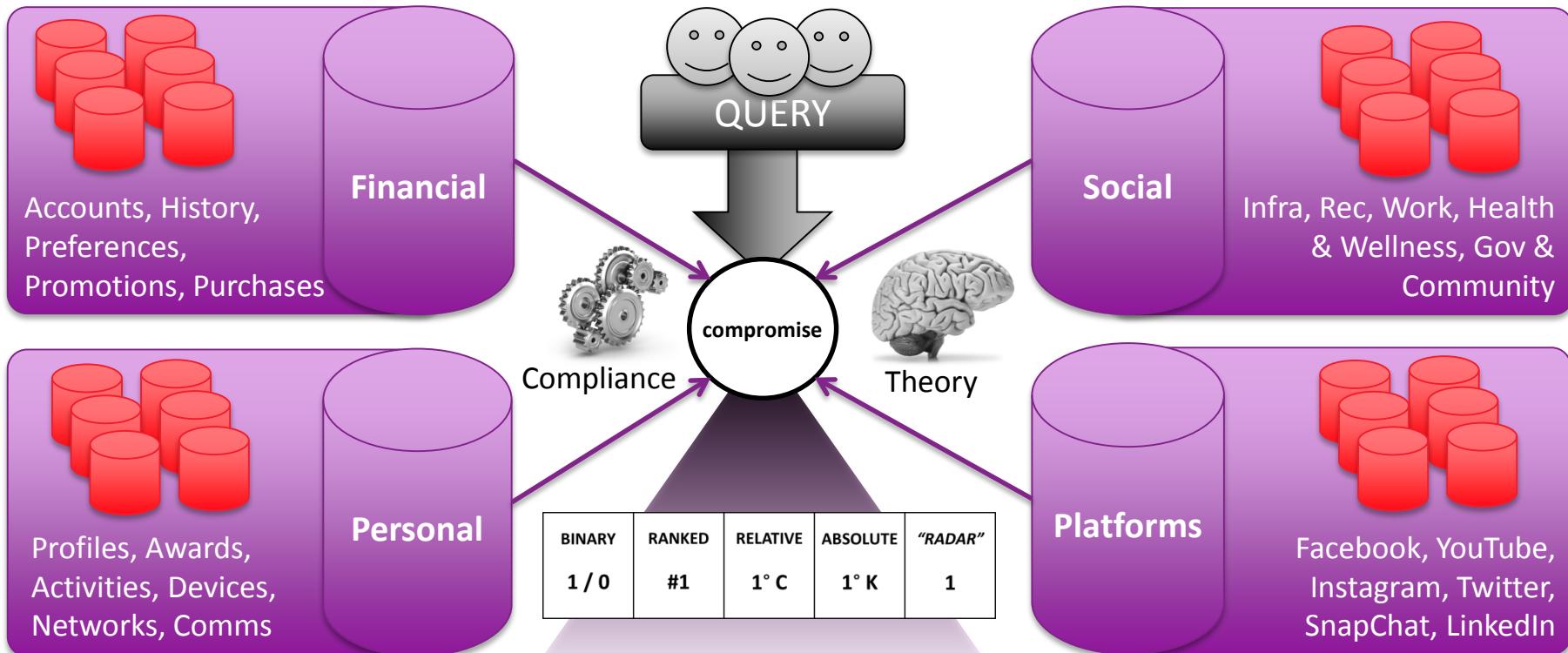


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SAFE LEARNING/INTEL ENGINES





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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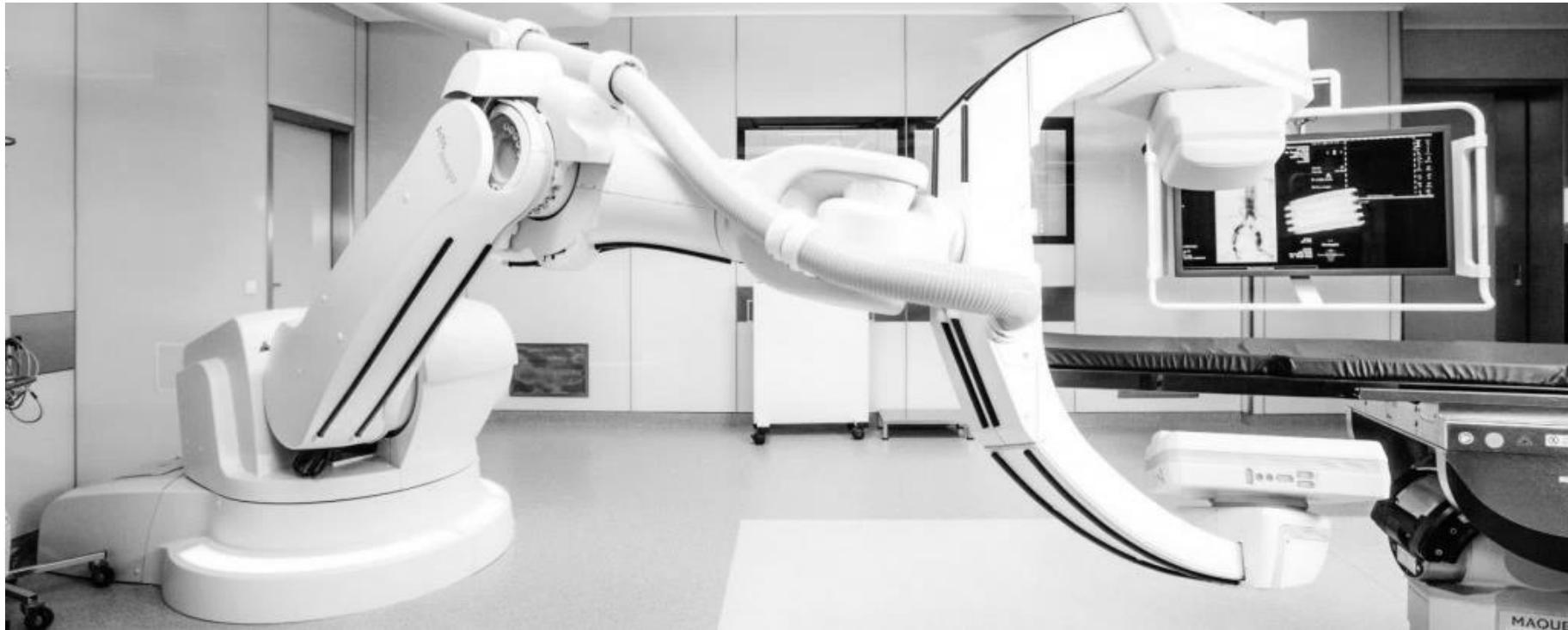
Cyber Ethics Framework As Evolutionary Guide Forward

- Improve the world, not repeat it; science to deal with promotion and preservation of security
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Healthcare



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Energy



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Los Angeles 'Automation' Vehicles

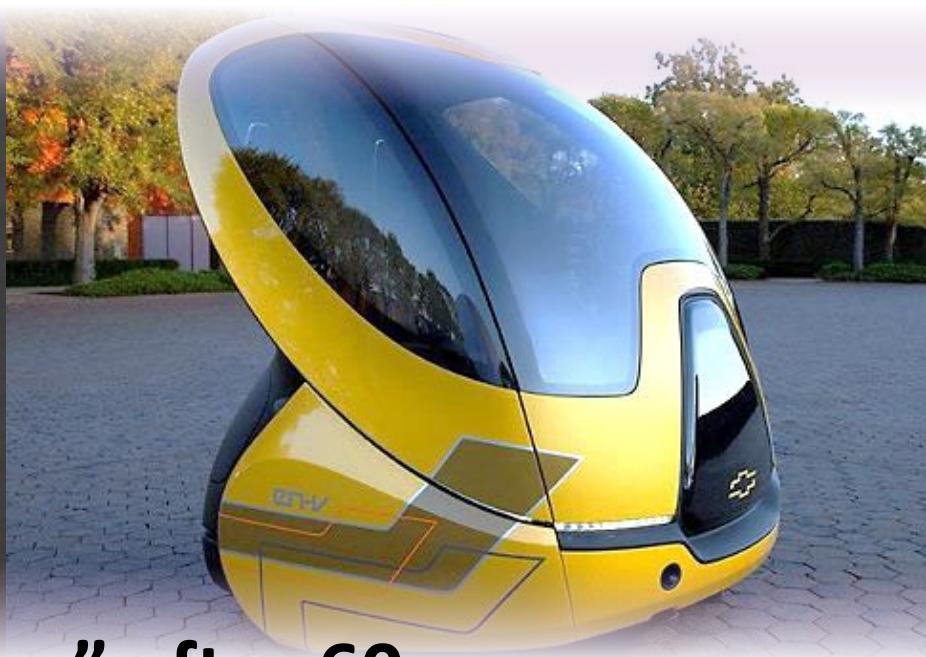
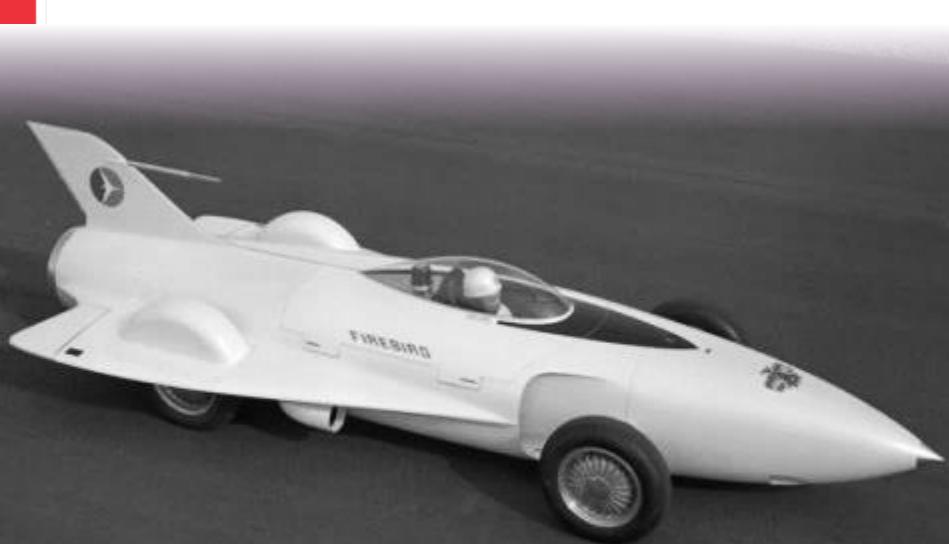


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Transportation



Still “Coming Soon” after 60 years

1954 FIREBIRD — 2014 en-v



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Connect Protect

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