

# U.S. ARMY COMBAT CAPABILITIES DEVELOPMENT COMMAND AVIATION \& MISSILE CENTER 

Cognitive Bias

Name of Presenter

Rank/Title of Presenter
Organization of Presenter

## Pencils down

Mike Love
Richard Petty
Terry Beasley
Jake Short
Kristin Walker
Ron Brown
Gordon Ramsey
Ozzie Newsome
Joshua Reynolds
Carrie Underwood

|  | Brent Johnson Dennis Wilson |  | Jordin Sparks Bella Thorne Jeff Gordon |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
|  | Dennis Wilson |  |  |
|  | Stanley Nowlan |  | William Turner |
|  | Ruben Studdard |  | Douglas Felker |
|  | Dale Earnhardt |  | Pat Sullivan |
|  | Tracy Rocker |  | Bobby Flay |
|  | China Anne McC |  | Cornelius Bennett |
|  | Jamie Oliver |  | Clair Bailey |
| Waloddi Weibull | Lee Roy Jordan | Carl Wilson | Brian Wilson |
| Jimmie Johnson | Lee Roy Jordan | George Stubbs |  |
| Debby Ryan |  | Bridgit Mendler |  |
| Cam Newton |  | Bo Jackson |  |
| Larry Kaplow |  | David Pearson |  |
| Rachael Ray |  | Howard Heap |  |
| George Romney |  | Derrick Thomas |  |
| Al Jardine |  | Wolfgang Puck |  |
| Scotty McCreery |  | Kelly Clarkson |  |
| John Hannah |  | James Crowley |  |

## Observation

## Characterization

## Correlation

- Ignorance
- Mistakes
- Data Noise
- Dishonesty



## Observation

## Characterization



- Ignorance
- Mistakes
- Data Noise
- Dishonesty

Correlation

Cognitive Bias


## REFERENCES



Amos Tversky


Richard Nisbett


Daniel Kahneman


Lee Ross


DK

DATA SCIENCE HOBBY

Al program Function of a company analytics (what) and buying trends (when).

|  | Return (12 month) |
| :--- | :--- |
| Dug agr | 22.2 |
| Dugtest 2 | 26.2 |
| Dugtest 1 | 17.8 |
| Dug variation | 14.2 |
| Dugtest (prev year) | 12.7 |
|  |  |
| Dow Jones | $-5.6 \%$ |
| NASDAQ | $-3.9 \%$ |

What percentage of each output? HINDSIGHT

| Returns |  |
| :---: | :---: |
| $\mathbf{2 6 . 2 \%}$ | $-1.2 \%$ |
| $\mathbf{2 2 . 2 \%}$ | $-5.1 \%$ |
| $\mathbf{1 7 . 8 \%}$ | $-10.7 \%$ |
| $\mathbf{1 4 . 2 \%}$ | $-13.6 \%$ |
| $\mathbf{1 2 . 7 \%}$ | $-13.7 \%$ |
| $12.4 \%$ | $-14.4 \%$ |
| $6.8 \%$ | $-14.8 \%$ |
| $4.5 \%$ | $-21.4 \%$ |
| $0 \%$ | $-23.4 \%$ |
| $-0.9 \%$ | $-34.1 \%$ |



## Jobs Pushed Out Of Apple

Apple hired former PepsiCo executive John Sculley in 1983 to serve as the company's CEO. Jobs and Sculley frequenty clashed with their competing visions for the company's future and that led to a showdown in 1985 before Apple's board of directors. Jobs lost out in the power struggle and the board stripped him of his management duties.

Later in the year Jobs left Apple entirely and started NeXT Inc to design a line of workstations for businesses and the education market.

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THE WORST CEOS

## John Sculley - Apple

John Sculley notoriously forced Steve Jobs out of Apple, a move that was to be made to look even more foolish in 1997 when Jobs was brought back in. Jobs almost didn't have a company to come back to, though. Sculley's regime was notable primarily for infighting among its leadership and a number of expensive failures such as the Apple Newton. Sculley also made a number of dubious strategic decisions, including raising the price of the Macintosh when personal computer prices were falling, refusing to license the Mac operating system, ignoring the corporate market, and chasing high profit margins at the expense of high market share. He was deposed by the board in 1993 with the company on the brink of bankruptcy.


## HINDSIGHT BIAS

| 1. RID No. | REVI | Project XYZ <br> W ITEM DISPOSI |  |
| :---: | :---: | :---: | :---: |
| 2.DATE OF REVEW | 3. NTLATOR/CER |  | 4. MML CODE/ PHCNE / EXT. |
| 5. RD TITLE: |  |  |  |
| 6. DOCUMENT TTLE SNMMER:$\square$ |  | 7. PAGE MIMEER(S): | 8. RECUIREVENT M.MAEEF(s) (T apolcable): |
| 9. DESCRIPTION CF PRCBEEM: |  |  |  |
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| FEIECTED ADCEPTED AS WFITEN D ADCEPTED WTH MODFICATICN (DESCRBE INBLOCK 14) [ |  |  |  |
| 14. DESCPAPTION(REFER TO BLIOCK 13) |  |  |  |

Requirements defect
Programming defect found via
Pair Programming
Programming defect found via
Continuous Integration
Design defect found via traditional system testing
Design or programming defect found via Test Driven Development (TDD)
Requirements or design defect found via Active Stakeholder Participation

Aircraft deliveries

| Fiscal <br> Year | A <br> $[59]$ | B <br> $[2]$ | C <br> $[80]$ | D <br> $[61]$ | E <br> $[62]$ | F <br> $[83]$ | G <br> $[84]$ | H <br> $[4]$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3 |  |  |  |  |  |  |  | 3 |
| 1955 |  | 13 |  |  |  |  |  |  | 13 |
| 1956 |  | 35 | 5 | 1 |  |  |  |  | 41 |
| 1957 |  | 2 | 30 | 92 |  |  |  |  | 124 |
| 1958 |  |  |  | 77 | 100 | 10 |  |  | 187 |
| 1959 |  |  |  |  |  | 79 | 50 |  | 129 |
| 1960 |  |  |  |  |  |  | 106 |  | 106 |
| 1961 |  |  |  |  |  |  | 37 | 20 | 57 |
| 1962 |  |  |  |  |  |  |  | 68 | 68 |
| 1963 |  |  |  |  |  |  |  | 14 | 14 |
| Total | 3 | 50 | 35 | 170 | 100 | 89 | 193 | 102 | 742 |


| Variant | Number built | Notes |  |
| :---: | :---: | :---: | :---: |
| NA-73X | 1 | Prototype |  |
| XP-51 | 2 | Prototypes |  |
| Mustang Mk I | 620 | Built for RAF at Inglewood, California |  |
| A-36 Apache | 500 | Dive-bomber variant of P-51; also known as "Invader" or "Mustang" |  |
| P-51 | 150 | Built at Inglewood, California. 93 were Lend-Leased to the UK, open USAAF and fitted with Allison V-1710-39 engines. | d by the |
| P-51A-NA | 310 | Built at Inglewood, California. 50 Lend-Leased to the RAF as the "M |  |
| XP-51B | 2 | Prototypes of P-51B |  |
| P-51B-NA | 1,987 | Built at Inglewood, California. First production version to be equippea win the ivenin engine. 308 suppied unaer Lena-Lease and operated by the RAF as "Mustang Mk III". |  |
| P-51C-NT | 1,750 | First P-51 variant to be built at North American's Dallas plant. Identica suffixed "-NT". 636 were supplied under Lend-Lease to the RAF as th | las were |
| XP-51D | 3 | Prototypes of P-51D |  |
| P-51D-NA/-NT | 8,200 | 6,600 built at Inglewood and 1,600 built at Dallas. 100 P-51D-1-NA w in the RAF as the "Mustang Mk IV". | Lease served |
| XP-51F | 3 | Lightweight version |  |
| XP-51G | 2 | Lightweight version; five-bladed propeller |  |
| P-51H-NA | 555 | Built at Inglewood, California |  |
| XP-51J | 2 | Allison-engined lightweight development. |  |



# https://www.google.com/url?sa= t\&rct=j\&q=\&esrc=s\&source=vid eo\&cd=1\&cad=rja\&uact=8\&ved =0ahUKEwiPmJuDrLIAhXupVkKHbKEAp Y QtwIIKD AA\&url=https\%3A\%2F\%2Fwww .youtube.com\%2Fwatch\%3Fv\% 3Drf71YotfykQ\&usg=AOvVaw0v 87MJ6oHWYv18jn9qU7LO 

## Circa 1475



Believed the Sun went around the Earth

Could not read or write
Spent their life within 2 miles of where they were born

Slept with livestock and had worms
Believed diseases came from bad smells

Believed in Witches

Circa 1475


The tendency to attribute behavior exclusively to the actor's dispositions and to ignore powerful situational determinants of the behavior.

- Lazy, Bureaucratic, Format over Substance.
- Greedy, Arrogant, Not to be trusted.
- Teacher's Pet, Hard Working, Yes Man.
- Lazy, Bureaucratic, Format over Substance.


## MICOM

- Lazy, Bureaucratic, Format over Substance.


## BOEING

- Greedy, Arrogant, Not to be Trusted.


## MTA

- Teacher's Pet, Hard Working, Yes Man.


## AvMC

- Lazy, Bureaucratic, Format over Substance.


## Referees ARE Fair

## FUNDAMENTAL ATTRIBUTION ERROR



You believe you have Felker's disease. This disease is contracted by 200 thousand Americans each year. A doctor gives you a test that has a false positive rate (stating you have the disease when you don't) of only 0.005.

You test positive (the test says you have the disease).
How likely are you to have the disease?

You believe you have Felker's disease. This disease is contracted by 200 thousand Americans each year. A doctor gives you a test that has a false positive rate (stating you have the disease when you don't) of only 0.005.

You test positive (the test says you have the disease).
How likely are you to have the disease?
<11.8 \%

FALSE POSITIVE PARADOX

Likelihood of Felker's
1 (True positives)
8.5 (True positives + False positives)

11.8 \%

## IGNORING THE BASE RATE

Regression to the Mean

- Shooter is Hot
- Sophomore Slump
- Yelling at pilots works

Sometimes the Base Rate is Random


Sometimes the Base Rate is Random (noisy)

If you hear hoofs, thinks horses not zebras.

RELIABILITY IMPROVEMENTS FOR FAKE ENGINE

|  | Internal Failure (61\%) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Leaks |  |  | Fatigue |  |  | External Failure |  |  | Mounting |  |  | Electrical |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Blades (turbine or compressor) |  |  | Blisks and Bearings |  |  | Stator related |  |  | Engine Casing |  |  | Ignition system |  |  | Shafts |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2410 / ASAP \% | 25\% |  |  | 25\% |  |  | 5\% |  |  | 2\% |  |  | 2\% |  |  | 2\% |  |  | 13\% |  |  | 12\% |  |  | 7\% |  |  | 5\% |  |  | 2\% |  |  |
| Constraint | DT | x | FVL | DT | x | FVL | DT | X | FVL | DT | x | FVL | DT | x | FVL | DT | x | FVL | DT | x | FVL | DT | x | FVL | DT | x | FVL | DT | x | FVL | DT | x | FVL |
| Advanced Lubricants |  |  |  | 5\% | 5\% | 5\% |  |  |  |  |  |  |  |  |  | 5\% | 5\% | 5\% |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Additive <br> Manufacturing | 5\% | 10\% | 12\% |  |  |  | 8\% | 10\% | 12\% | 10\% | 12\% | 14\% | 5\% | 5\% | 5\% |  |  |  | 6\% | 8\% | 10\% | 5\% | 5\% | 7\% |  |  |  |  |  |  |  |  |  |
| Advanced Coatings | 5\% | 10\% | 12\% | 5\% | 10\% | 10\% | 5\% | 10\% | 10\% | 5\% | 10\% | 10\% |  |  |  | 5\% | 5\% | 5\% |  |  |  |  |  |  | 5\% | 5\% | 5\% |  |  |  |  |  |  |
| Advanced Combustion Eff. |  |  |  |  |  |  |  |  |  |  |  |  | 10\% | 10\% | 30\% |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Advanced Material | 5\% | 6\% | 7\% | 3\% | 3\% | 5\% | 3\% | 3\% | 5\% | 2\% | 3\% | 3\% | 2\% | 2\% | 3\% | 3\% | 3\% | 5\% |  |  |  | 5\% | 5\% | 8\% | 2\% | 2\% | 3\% |  |  |  |  |  |  |
| Advanced Seals |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5\% | 5\% | 5\% |  |  |  |  |  |  |  |  |  |  |  |  |
| Health Monitoring (Regime Recognition) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5\% | 5\% | 20\% |  |  |  |  |  |  |  |  |  |
| Health Monitoring (Predictive) | 1\% | 1\% | 3\% | 5\% | 5\% | 10\% | 1\% | 1\% | 3\% | 1\% | 1\% | 3\% | 0\% | 0\% | 5\% | 5\% | 10\% | 20\% | 0\% | 2\% | 5\% | 1\% | 2\% | 3\% | 2\% | 2\% | 5\% | 2\% | 2\% | 5\% |  |  |  |
| Improved Sand Separation | 0\% | 2\% | 10\% |  |  |  | 0\% | 2\% | 10\% |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Advanced Design Concepts | 2\% | 2\% | 4\% | 2\% | 2\% | 4\% | 2\% | 2\% | 4\% | 2\% | 2\% | 4\% | 2\% | 2\% | 4\% | 2\% | 2\% | 4\% | 5\% | 5\% | 8\% | 5\% | 5\% | 8\% | 5\% | 5\% | 8\% | 2\% | 3\% | 4\% | 10\% | 20\% | 30\% |
| Advanced Cooling | 2\% | $3 \%$ | 5\% | 2\% | 3\% | 5\% | 2\% | 3\% | 5\% | 2\% | $3 \%$ | 5\% | 2\% | 3\% | 5\% | 0\% | 0\% | 2\% |  |  |  | 0\% | 0\% | 2\% |  |  |  |  |  |  |  |  |  |




Questioner and Contestant Game
Post Game General Knowledge Estimate (0-100)
Questioner's Score
Q-53 C-50

Contestant's Score

$$
Q-68 \quad C-41
$$

Observer's Score

$$
Q-82 \quad C-49
$$

CAR INSURANCE COMMERCIAL

Drivers who switched, Saved an average $\$ 350$ !

For customers with accident forgiveness, There Rates won't go Up!

For customers with new car replacement, They won't drive around on three wheels!

Skewed samples hide in the assumptions and fre pepint.

RANDOMNESS

## Mission = 200 miles away



Improved Vehicle

## 75\% Reduction in Sorties!

- DO NOT FORCE THE INPUT TO RANDOM
- Take all data and Understand the sample then compensate.

$$
Z_{0}=\frac{\overline{x_{1}}-\overline{x_{2}}-\Delta_{0}}{\sqrt{\frac{\sigma_{n}^{2}}{n}+\frac{\sigma_{N}^{2}}{N}}}
$$

## ASAP Scoring




Sample 1


Sample 2


There are two hospital in one town. In the large hospital 45 babies are born a day. In the smaller one 15 babies are born a day. Which hospital has more days of at least $60 \%$ boys born?

- The larger hospital
- The smaller hospital
- About the same (within 5 \%)

In a five-game series, the worst team in baseball will beat the best about what percentage of the time?

2/3 one color (Red or White)


Sample 1


Sample 2


8 to 1 odds $=$ White $2 / 3 \quad 16$ to 1 odds $=$ White $2 / 3$

LAW OF SMALL NUMBERS

There are two hospital in one town. In the large hospital 45 babies are born a day. In the smaller one 15 babies are born a day. Which hospital has more days of $60 \%$ boys born?

- The larger hospital
- The smaller hospital
- About the same (within 5 \%)

In a five-game series, the worst team in baseball will beat the best about what percentage of the time?

$$
\begin{gathered}
15 \% \\
\text { (Moneyball - Michael Lewis) }
\end{gathered}
$$

Eliminates doubt by suppressing ambiguity and automatically constructs coherent stories that help explain our observations.

It embellishes scraps of information to produce a much richer image than the facts often justify.

Is prone to jumping to conclusions and will construct a vision of reality that is too coherent and believable.

Humans are pattern seekers and look for meaning in their observations.

People do not expect to observe regular patterns from a random process and when they do see a potential correlation they are far too quick to reject the assumption that the process is entirely random.

> Test/Demonstration Plans are for budget \& schedule. Information comes from Data.

- Modern Army Systems cannot demonstrate full release for reliability ( $80 \%$ confidence) from a test program before FUE.


When did failing a demonstration test become a bad thing?

## Bathroom break

## (for half of you)

- Is the height of the tallest redwood more or less than 1200 feet?
- What is you best guess about the height of the tallest redwood?
- Was the batting average of the 1930 cardinals more or less than .320 ?
- What is you best guess about of the 1930 cardinals batting average?
- Does the space station travel faster than 50000 mph ?
- How fast does the space station travel?

AVIATION \&

- Is the height of the tallest redwood more or less than 120 feet?
- What is you best guess about the height of the tallest redwood?
- Was the batting average of the 1930 cardinals more or less than .285
- What is you best guess about of the 1930 cardinals batting average?
- Does the space station travel faster than $\mathbf{5 0 0 0} \mathbf{~ m p h}$ ?
- How fast does the space station travel?


## Premature Commitment and Insufficient Revision

- Observers watched a subject solve 15 out of 30 logic problems
- Subject that solved the 15 early were judged smarter (Jones, Rock, Shaver, Goethals, and Ward 1968)
- What would it take to put you in this new car?
- Coffee cup experiment
- How many of you still think I can pick Stocks?
- FYI
- Tallest living redwood ~380 ft.
- 1930 Cardinals batted .314 .
- Space station travels at 17,500 miles per hour.

Anchoring


Tom W. is of high intelligence, although lacking true creativity. He has a need for order and clarity, and for neat and tidy systems in which every detail finds the appropriate place. His writing is rather dull and mechanical, occasionally enlivened by somewhat corny puns and flashes of imagination of the sci-fi type. He has a strong drive for competence. He seems to have little feel and little sympathy for other people, and does not enjoy interacting with others. Self-centered, he nonetheless has a deep moral sense. TOM W. PROBLEM
A. Business Administration
B. Computer Science
C. Engineering
D. Education
E. Law
F. Biology
G. Library Science
H. Psychology
I. Social Sciences and History
A. Business Administration

381,353
B. Computer Science

71,420
C. Engineering
D. Education
E. Law
F. Biology
G. Library Science
H. Psychology

115,640
85,118
4,272
116,759
109
I. Social Sciences and History 161,211 JACK AND DICK

- Jack is a 45-year old man. He is married and his four children. He is generally a conservative, careful, and ambitious. He has no interest in political and social issues and spends most of his free time on his many hobbies which include carpentry, sailing, and mathematical puzzles.
- Dick is a 30-year old man. He is married with no children. A man of high ability and high motivation, he promises to be quite successful in his field. He is well liked be his colleagues.

Given 5 personality sketches
(From Very Lawyer-like to Very Engineer-like)
Asked to rate the likelihood of an Engineer.

LAWYER ENGINEER 70/30

| Told from sample <br> of $70 \%$ Engineers | Told from sample <br> of $70 \%$ Lawyers |
| :--- | :--- |


| Sketch 1 | $5 \%$ | $5 \%$ |
| :--- | :--- | :--- |
| Sketch 2 | $40 \%$ | $30 \%$ |
| Sketch 3 | $50 \%$ | $50 \%$ |
| Sketch 4 | $92 \%$ | $89 \%$ |
| Sketch 5 | $94 \%$ | $98 \%$ |

One constantly goes beyond the information given.
Jerome Bruner

Fake Reliability


Fake Reliability and Probability of Hit


Fake Gunner Error \& Reliability


LINDA PROBLEM

Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti nuclear demonstrations.
A. Linda is a teacher in an elementary School
B. Linda works in a bookstore and takes yoga classes
C. Linda is active in the feminist movement
D. Linda is a psychiatric worker
E. Linda is a member of the League of Woman Voters
F. Linda is a bank teller
G. Linda is an insurance salesperson
H. Linda is bank teller and is active in the feminist movement

## Linda is a bank teller



## Capital Punishment

1. Panel Design Evidence (State before and After)
2. Concurrent Design (Two States at Same Time)

Best evidence design = View on Capital Punishment

## Children with new magic makers

The extrinsic "good player award" replaced intrinsic fun.
Rewarded Children played less with Markers

CASUAL CONJUNCTION

Causation Prejudice - (Mill 1974)

- To seek a single sufficient explanation for any event
- Consensus
- Narrative
- First - Emotional Commitment

The most deeply rooted fallacy....is that the conditions of a phenomenon must or at least probably will, resemble the phenomenon itself.

John Stuart Mill

| HDEEOM | CBM and RCM <AMRDEC50 |
| :---: | :---: |
| True State (TS) $=$ <br> What we are trying to know | Error Between True State and the information contained in Radiating Symptoms |
|  | + Error Between Radiating Symptoms and Information capable to the Sensor Technology |
| CBM started here $\quad \Rightarrow$ | + Error Between Sensor Technology and actual information picked up by Existing System Sensors |
|  | + Error Between Existing Sensors and Current Sensor Data Signature |

All we know ..... + Current Sensor Data Signature

1. Current Sensor Data Signature is the ONLY Known Information
2. The Errors are Additive and INDEPENDENT

PM/FM MATRIX (CAUSAL)


# Come up with as many words as can that fit the following pattern: 

$----{ }^{\mathrm{n}}$ _

# Come up with as many words as can that fit the following pattern: 

_-_ _ ing
$\longrightarrow$ MISSIIE CENTER

## WRITE DOWN THE PEOPLE.

1 Dennis Wilson<br>Carl Wilson<br>Brian Wilson<br>Mike Love<br>Al Jardine

4<br>Carrie Underwood<br>Kelly Clarkson<br>Jordin Sparks<br>Ruben Studdard<br>Scotty McCreery

5
Brent Johnson
Clair Bailey
Ron Brown
Larry Kaplow
James Crowley

6
David Pearson
Jeff Gordon
Jimmie Johnson
Dale Earnhardt
Richard Petty

7
Bo Jackson
Pat Sullivan
Cam Newton
Tracy Rocker
Terry Beasley

9
Bridgit Mendler Debby Ryan Bella Thorne
China Anne McClain Jake Short
$\stackrel{2}{2}$ George Romney Joshua Reynolds William Turner
Thomas Gainsborough George Stubbs

3
Douglas Felker Kristin Walker Stanley Nowlan Howard Heap
Waloddi Weibull

Availability

## Ease of Generation = Likelihood

- Rehearsal
- Vivid data vs. Pallid data
- Emotional data


## Availability

AVIATION \&


## Closing

Brain scans of individuals high on the drug revealed that the chemical allows parts of the cortex to become flooded with signals that are normally filtered out to prevent information overload.
The drug allowed more information to flow from the thalamus, a kind of neural gatekeeper, to a region called the posterior cingulate cortex, and it stemmed the flow of information to another part known as the temporal cortex.

## YOU ARE DOING IT

It is quite wrong to try founding a theory on observable magnitudes alone. In reality the opposite happens. It is the theory which decides what we can observe.

Albert Einstein

## Data does not speak for itself



## FUNDAMENTAL ATTRIBUTION ERROR

KO's need a paper trial - many of their actions are legal not logical

Airworthiness means someone has sign his name
Many actions rise from potential audits
Contractors and government workers all went to the same school.

## WHAT DO THE OTHER CELLS LOOK LIKE?

Build a 2X2 Cell
Unsuccessful Successful

$R \& N$

HAVE A GENERAL VIGILANCE

Bias in Expected or Neutral Outcomes.
Skews from Disinterested People.
Actor and observers accounts based upon theory.
Explaining away exceptions.
Processed information or Raw data.
You are taking more credit than you deserve.


## Web Site <br> https://www.avmc.army.mil/

Facebook<br>www.facebook.com/ccdc.avm

Instagram
www.instagram.com/CCDC_AVM

Twitter<br>@CCDC_AVM

## Public Affairs

usarmy.redstone.ccdc-avmc.mbx.pao@mail.mil

