

Cyberchess

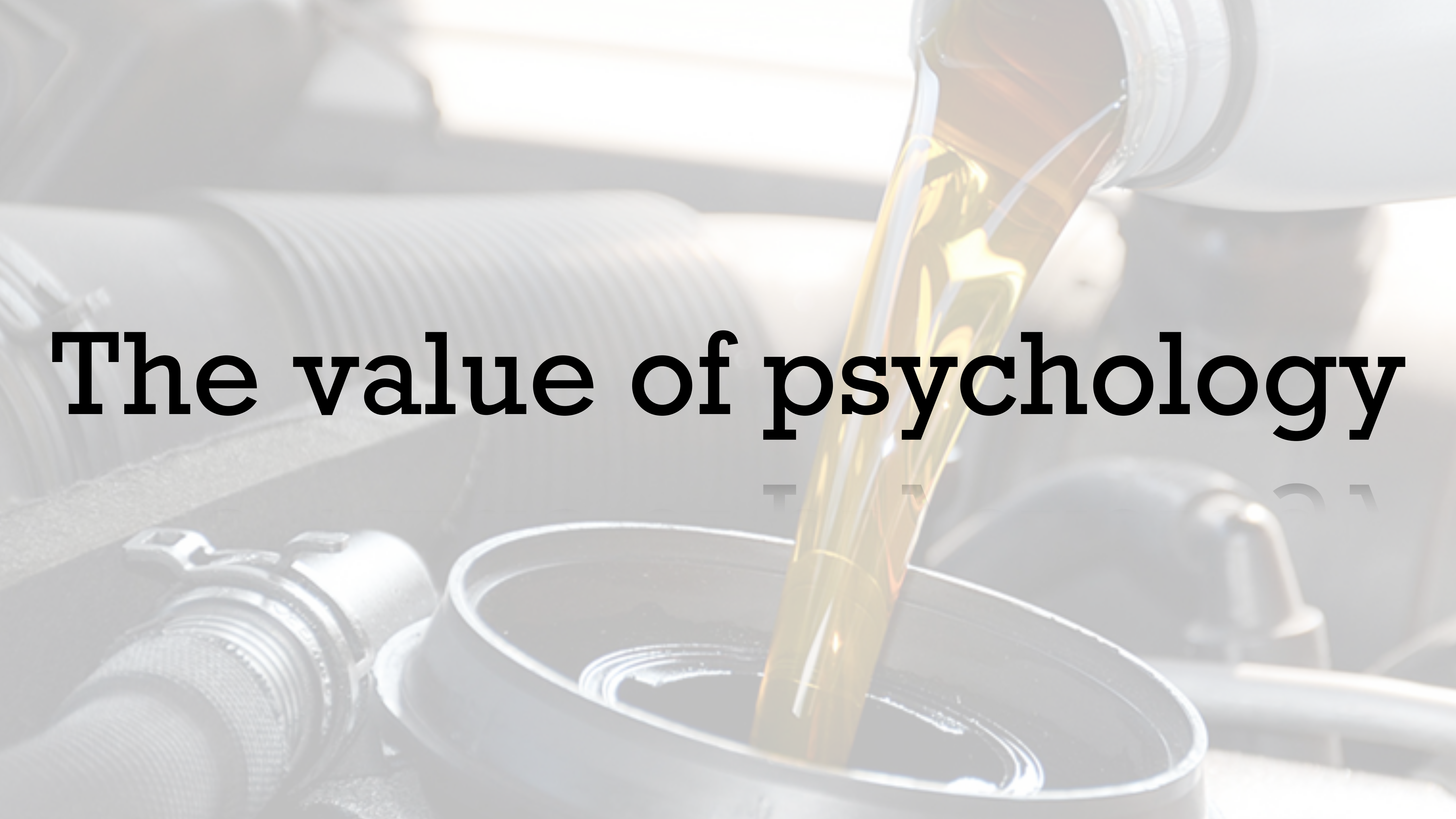
**Unconscious Human Behaviour and Social Engineering
Bridging a Gap between Psychology and Information Security**

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Chief Psychology Officer, Grey Matters

 @mcoster @greymattersNL

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The value of psychology



New? No!



Forbes

“Psychology, the science of mind and behavior, permeates business on many dimensions — from negotiation to sales to product design. In it’s simplest form, *business is psychology.*”

Forbes Magazine, 2010



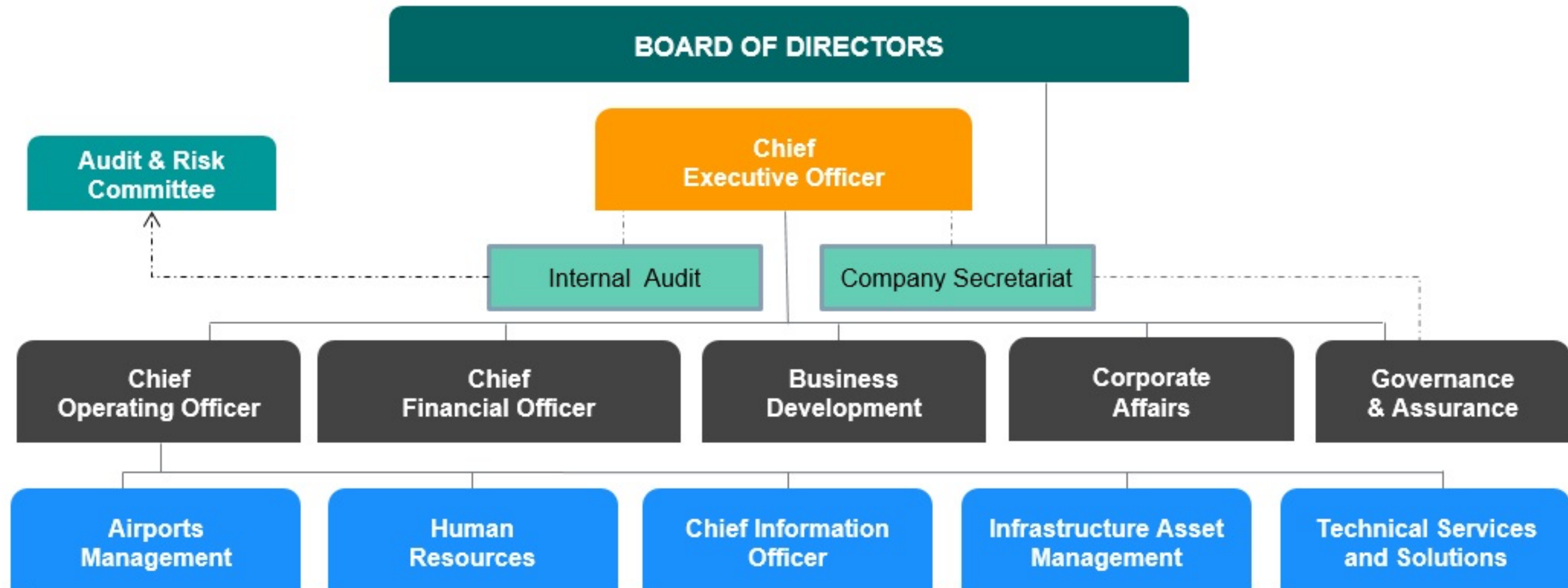
business *is* psychology

Forbes Magazine, 2010

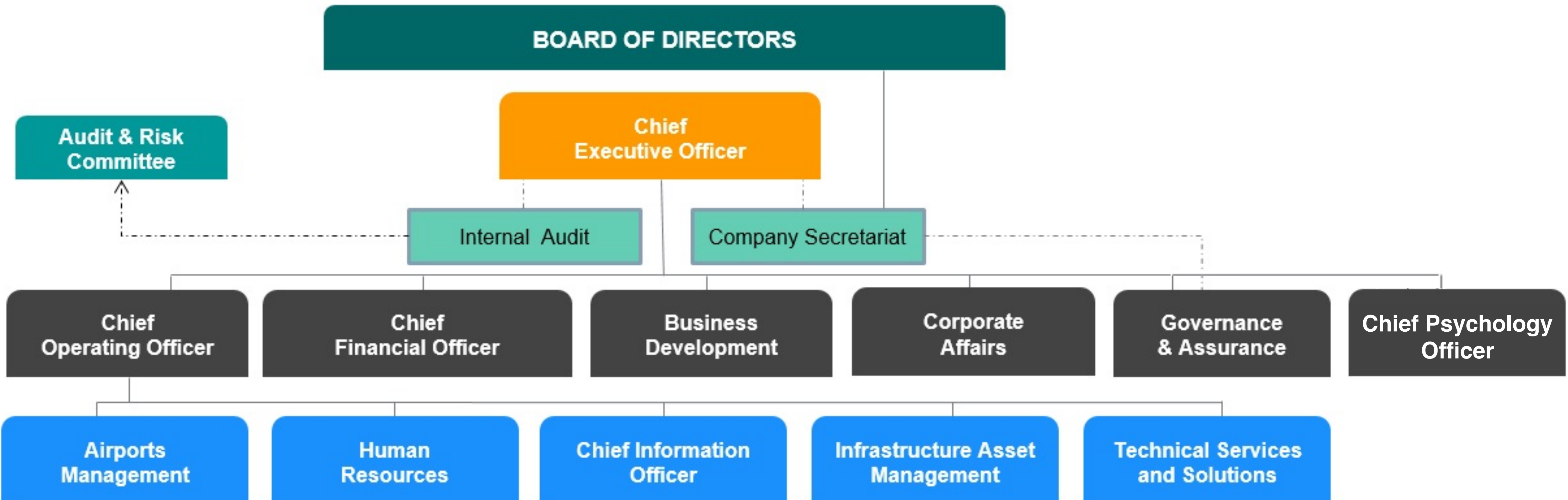


security is psychology

Psychology in business



Chief Psychology Officer



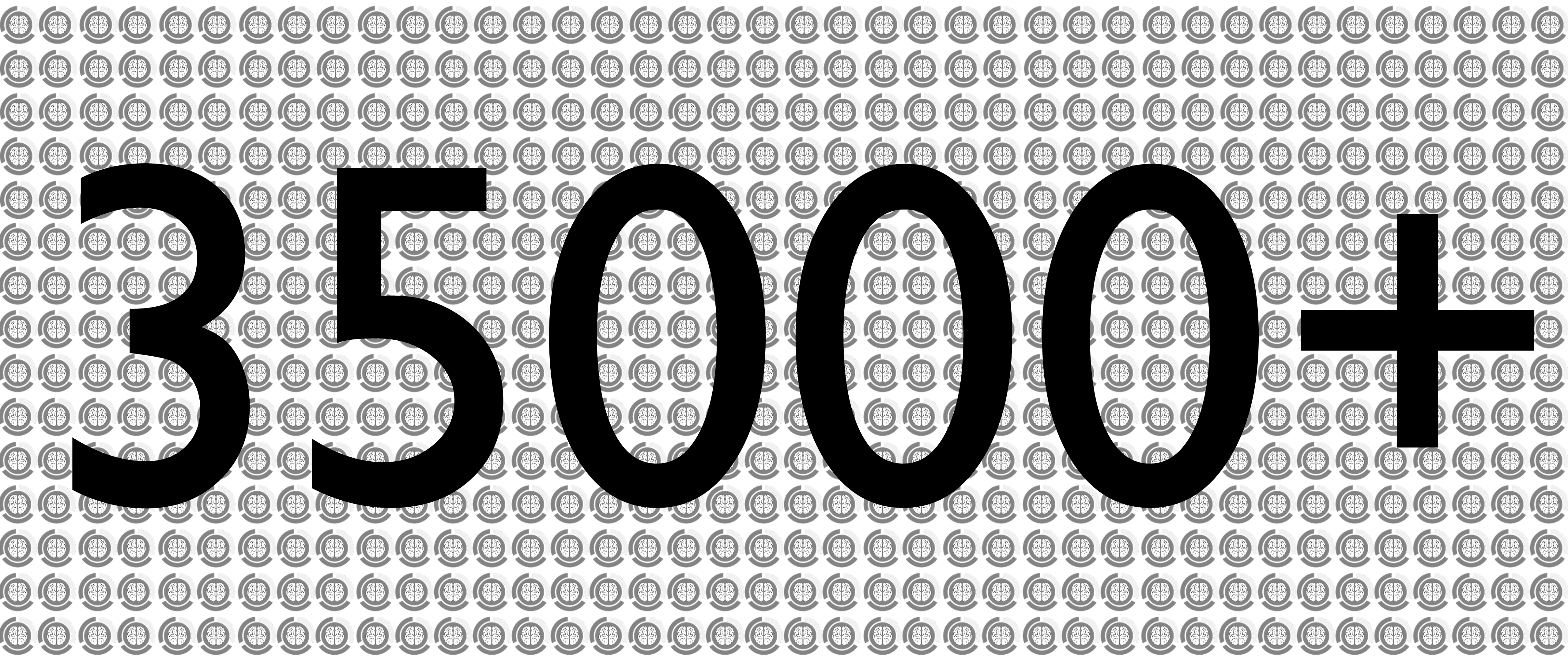
Topics



- ① Unconscious behaviour
- ① Dangerous biases
- ① Current threats
- ① Influence models
- ① Wrap-Up

Unconscious Behaviour

3500+



System 1



Fast



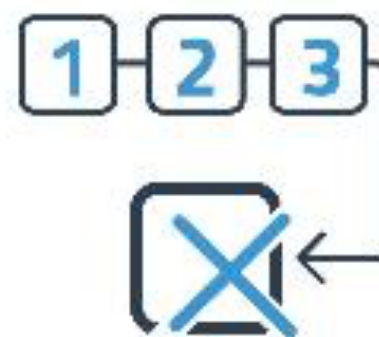
Unconscious



Automatic



Everyday
Decisions



Error prone

System 2



Slow



Conscious



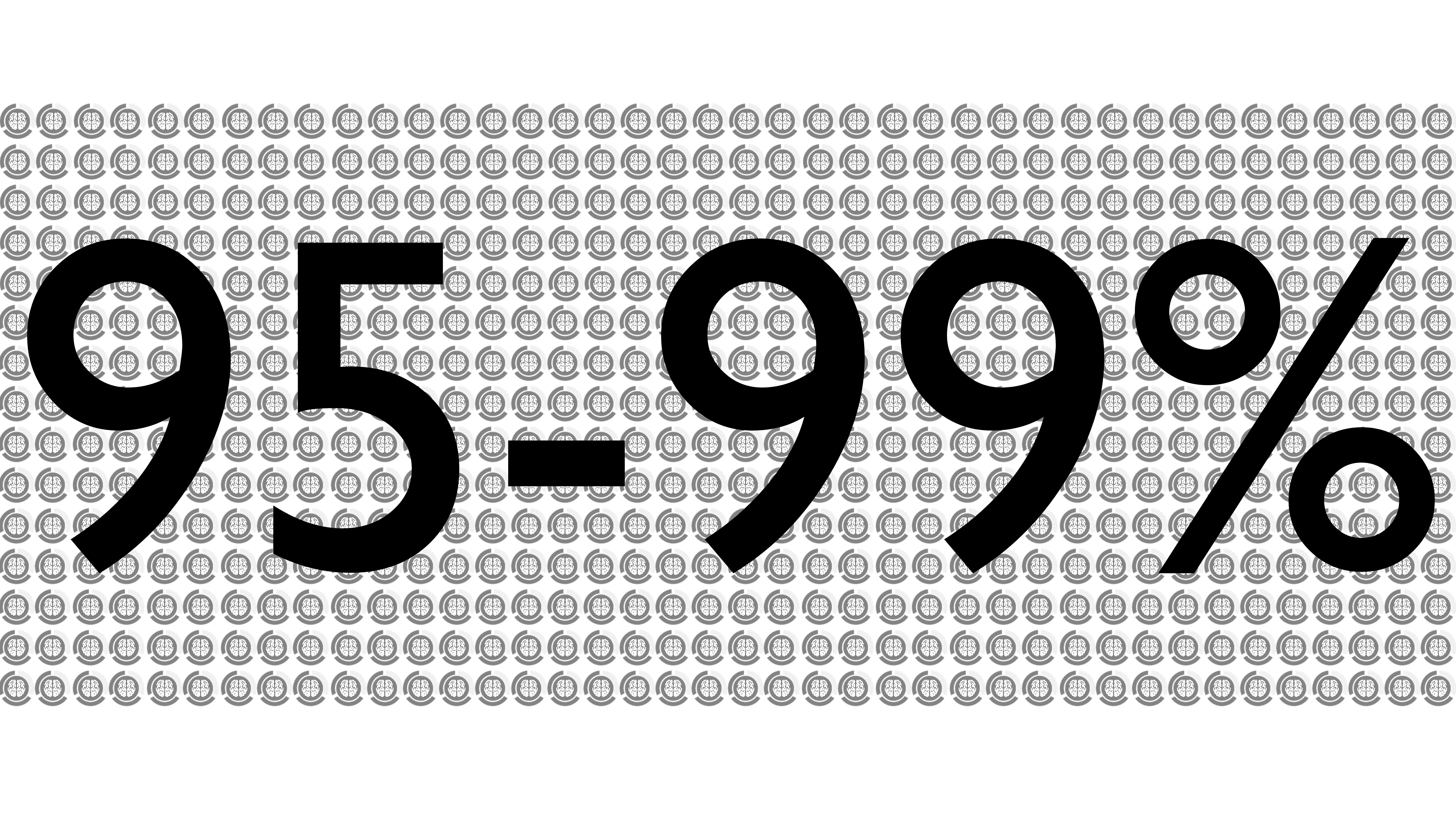
Effortful



Complex
Decisions



Reliable



95-99%





Heuristics / Biases

**Dangerous biases used
by social engineers**

by social engineers

!! Authority !!



!! Consistency !!



In for a penny,
in for a pound

!! Consistency !!



A



B

!! Consistency !!



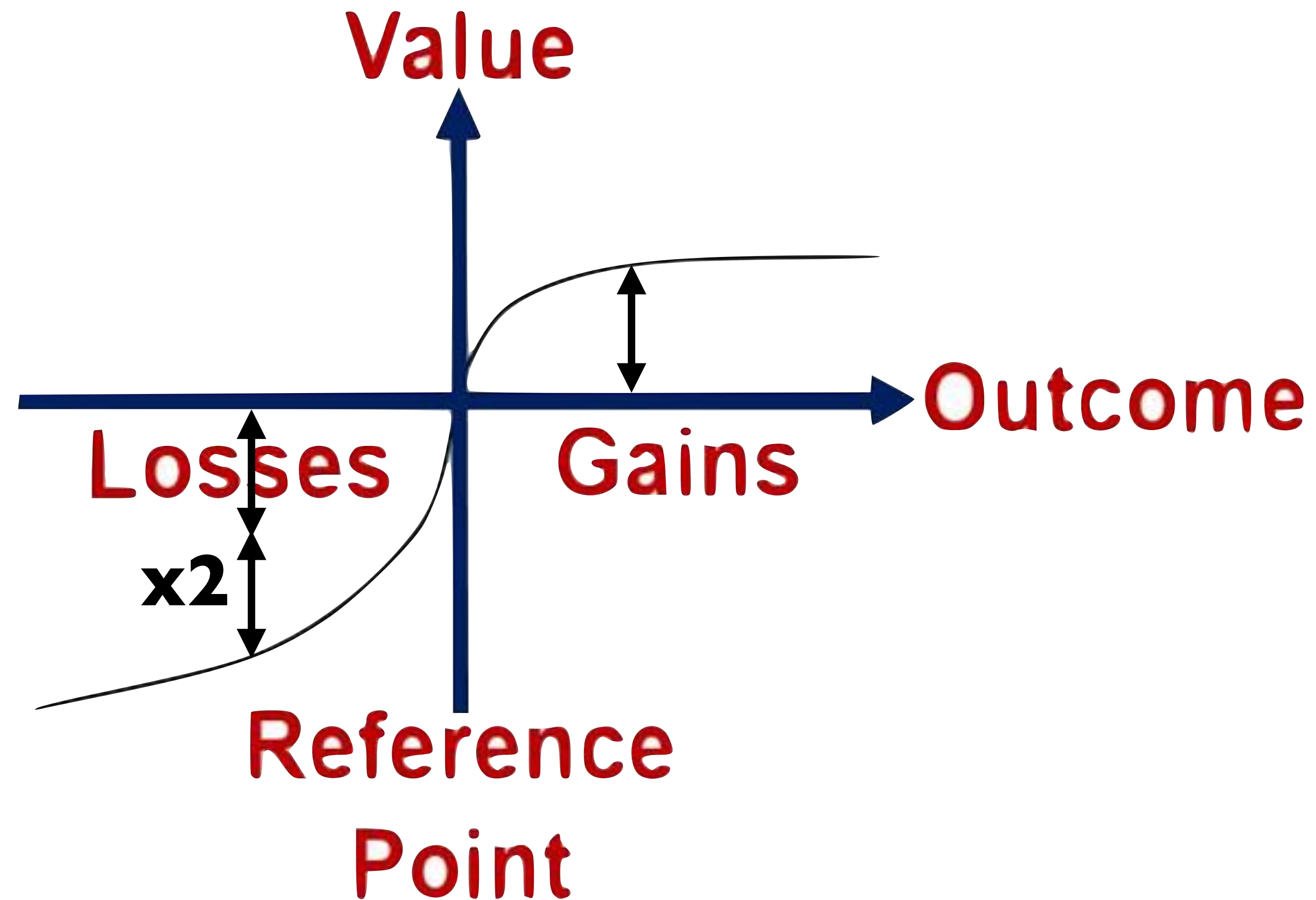
7000%

!! Loss Aversion !!



Could you please give your employee ID and password to reconcile your salary data?

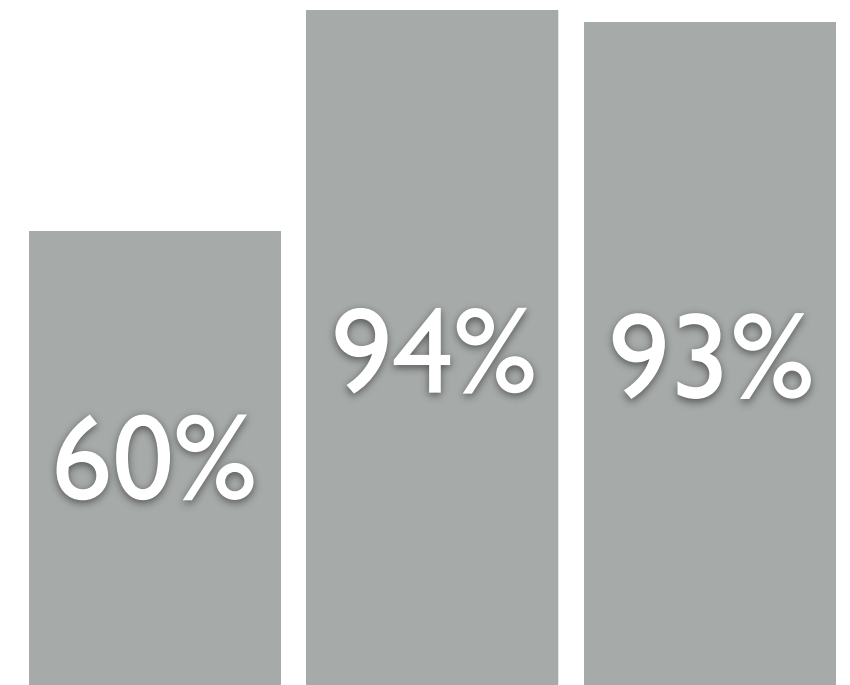
!! Loss Aversion !!



!! Because as a reason !!



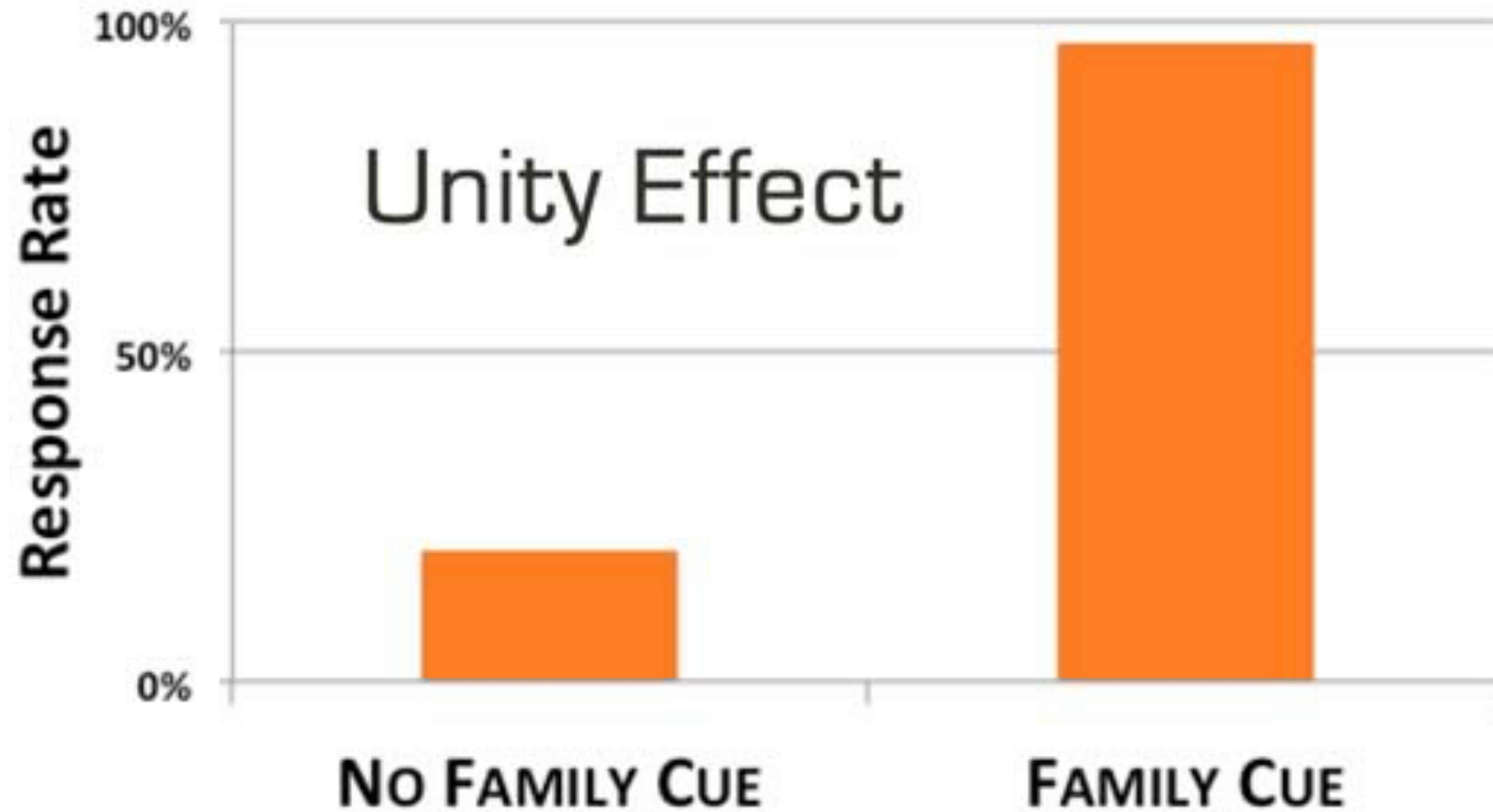
“Excuse me, I have 5 pages. May I use the Xerox machine?”



“Excuse me, I have 5 pages. May I use the Xerox machine because I’m in a rush?”

“Excuse me, I have 5 pages. May I use the Xerox machine because I have to make copies?”

!! Unity effect !!



!! Social Proof !!



!! Social Proof !!



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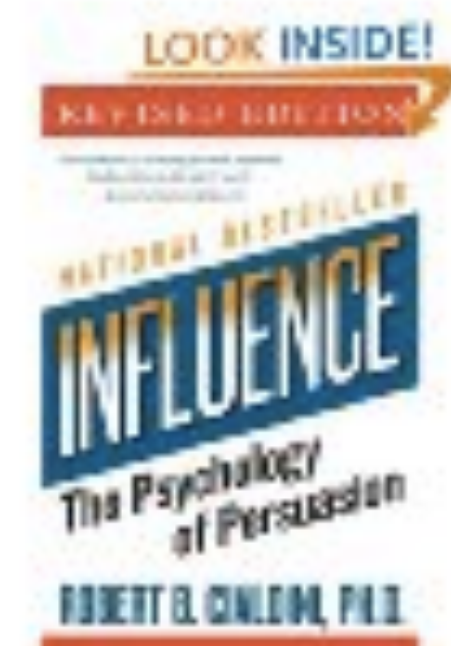
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!! Reciprocity !!



Hi Mischa,
Could you help us by filling out this survey for me?

Thanks,
Robert

EMERITI BIENNIAL BIOBIBLIOGRAPHIC SURVEY

Responses to Include Just Two Years, from JULY 2007 through JUNE 2009

Last Name _____

Phone: _____
E-mail: _____

3. TEACHING
Did you teach on campus? (Check if) Yes
Elsewhere? (Please list): _____
of students advised or mentored: *

Undergraduate _____ Graduate _____

The above for emeriti use? Check if OK
Retired (Check one): before 1991 1991-1995
 1996-2000 2001-2005 2006-2009

4. UNIVERSITY SERVICE (#s served) *
Committees / Groups:
____ Academic Senates _____ Emeriti
____ Department _____ Fund Raising
____ Doctoral _____ Advising
____ Administration _____ Other _____
Special Appointments or Positions Held: _____

1. YOUR RESEARCH

Field: _____
Did you have campus space? Check if Yes
Did you have external funding? Check if Yes
Did you fund staff? (if so, please provide numbers) *
____ Research Assistants _____ Secretarial
____ Post-doctoral Fellows _____ Other _____
Check your response help with:
 Funding Office space Laboratory space
 Seasonal work _____

5. PROFESSIONAL SERVICE (#s served) *
Committees / Groups:
____ Offices held
____ Editorial Appointments
____ Articles Reviewed
____ Book Mss. Reviews
____ Written Recommendations
____ Other Service
____ Professional Meetings

2. PUBLICATIONS & PROFESSIONAL WORKS

during the July 2007-June 2009 period

Books _____
Articles _____
Book Reviews _____
Professional Reports _____
Consulting Reports _____
Technological Projects _____
Professional Lectures/Papers _____
Scholarly Projects in Progress _____
Films / Videos _____
Literary Works _____
Music / Theater Works _____
Performances _____
Art Works _____
Exhibitions _____

6. COMMUNITY SERVICE (#s) *
Committees / Groups:
____ Local _____ State _____ National
____ Offices held _____ Honors

Details (for any category): * _____

7. PERSONAL NOTES *
Your average # of campus visits per week: _____
Are you more , or less , or just as busy as you were before retirement?
Any unusual interests or hobbies? _____

* Besides the numbers, explanatory details are optional but very welcome if you care to include some in margins or elaborate on your activities, concerns, or views on the back of this sheet.
~ MANY THANKS ~

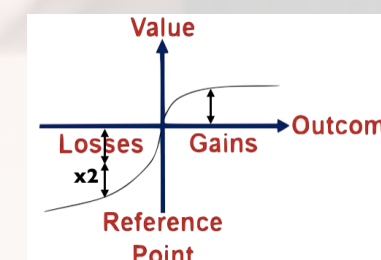
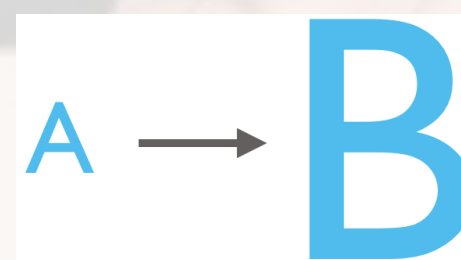


Current Threats

!! Reverse Social Engineering !!



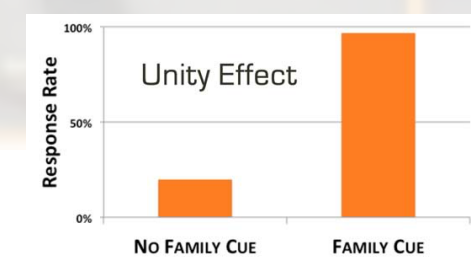
Hacker corrupts your system and patiently waits for you to ask for help



!! Piggybacking !!



Someone walks through the door directly behind you, even thanking you for opening the door



!! Authority !!



NOS

Nieuws

Sport

Uitzendingen

TELEIEKST

AEX

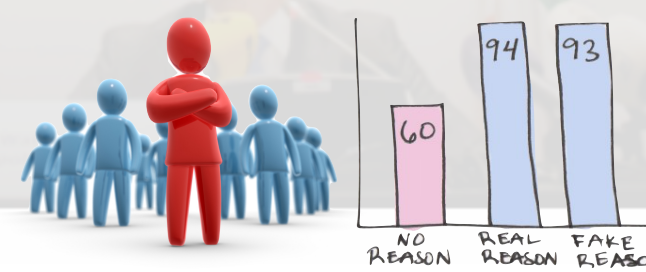
0 km

20°



'Nep-baas-fraude' ook in
Nederland
© 07-09-2016
Hacker assumes identity of
authority figure (CEO) and
instructs payment. Often in
combination with phone spoofing

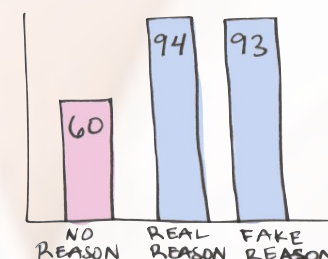
Europol ANP



!! Tech Talk !!



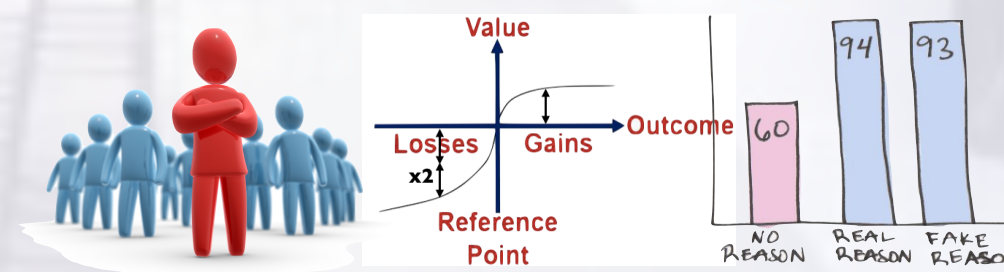
Hacker poses as 'IT guy', asking very technical questions until target responds 'why don't you take over my system for a minute'



!! Vishing !!



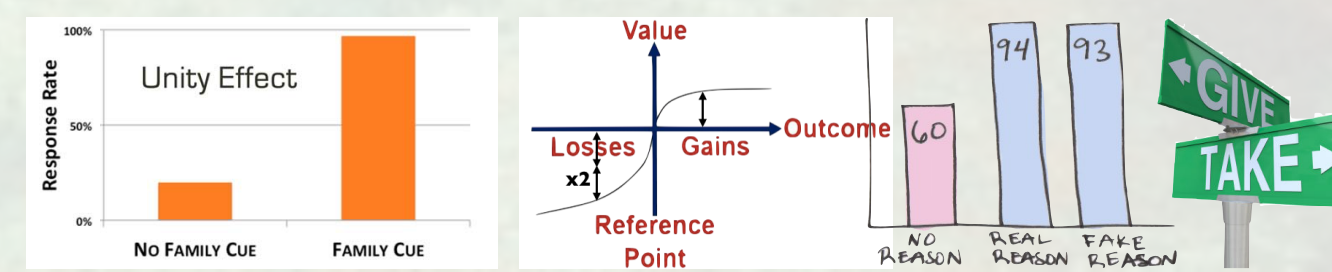
Voice Phishing. Large-scale attack. For instance to have target transfer money.



!! Spear Phishing !!



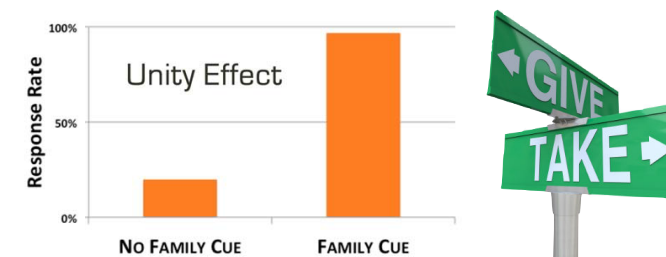
Very focussed form of Vishing that is pointed at just 1 target but requires a lot more preparations.



!! Friendliness !!



Social engineer helps you out.
You feel 'guilty' and are inclined to
return the favor.



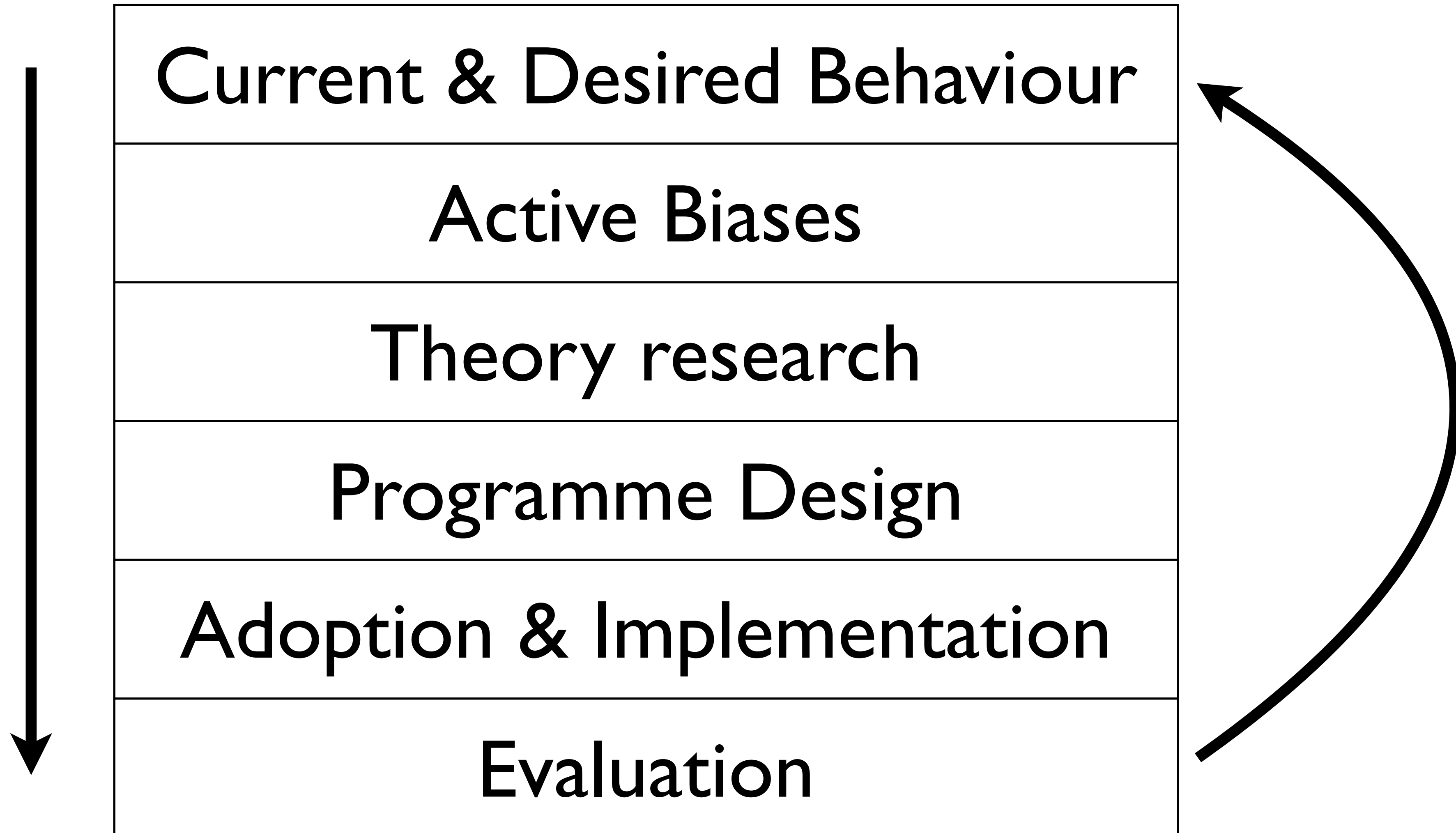
Influence models

to make employees and colleagues

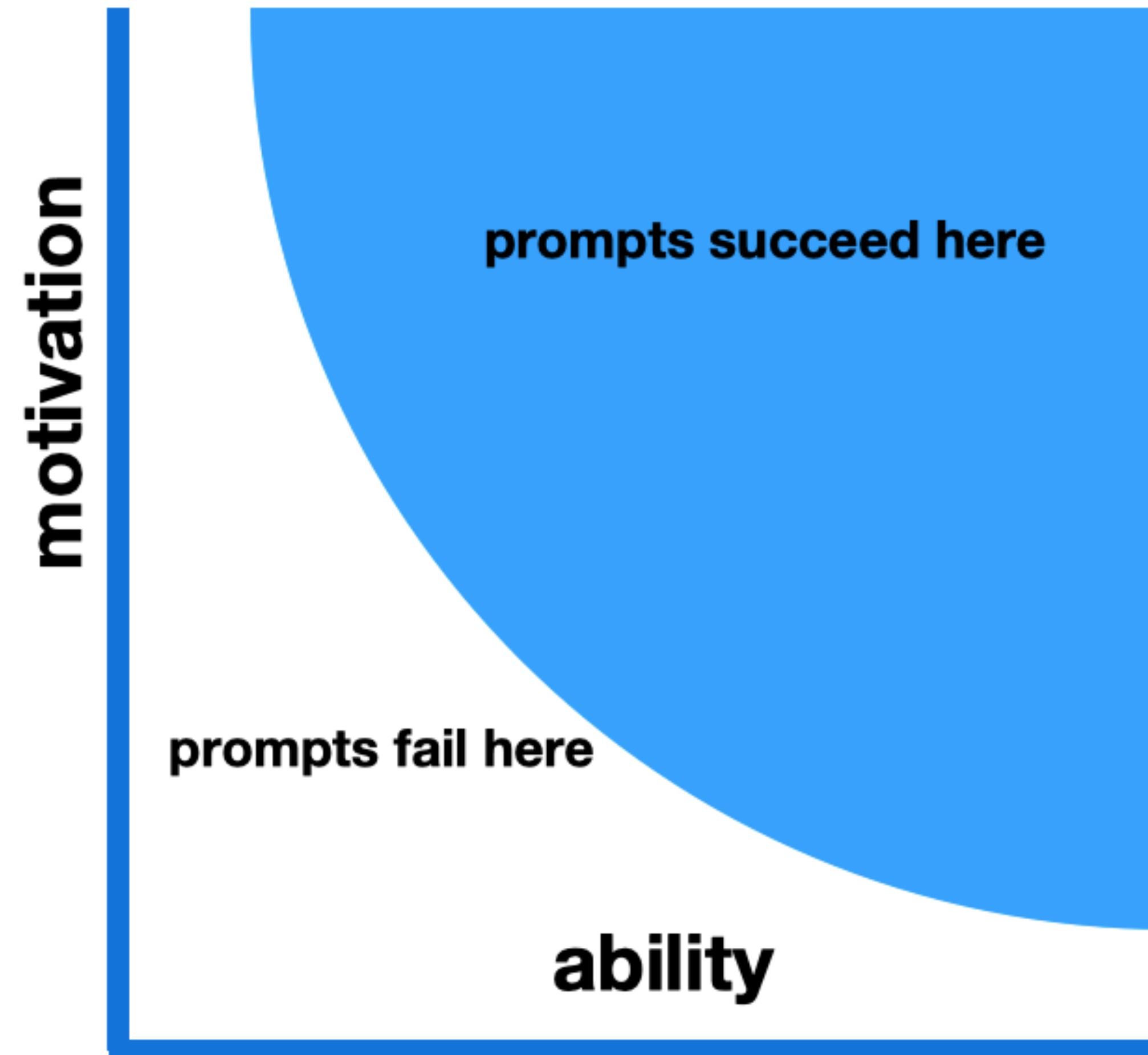
more security-aware

more security-aware

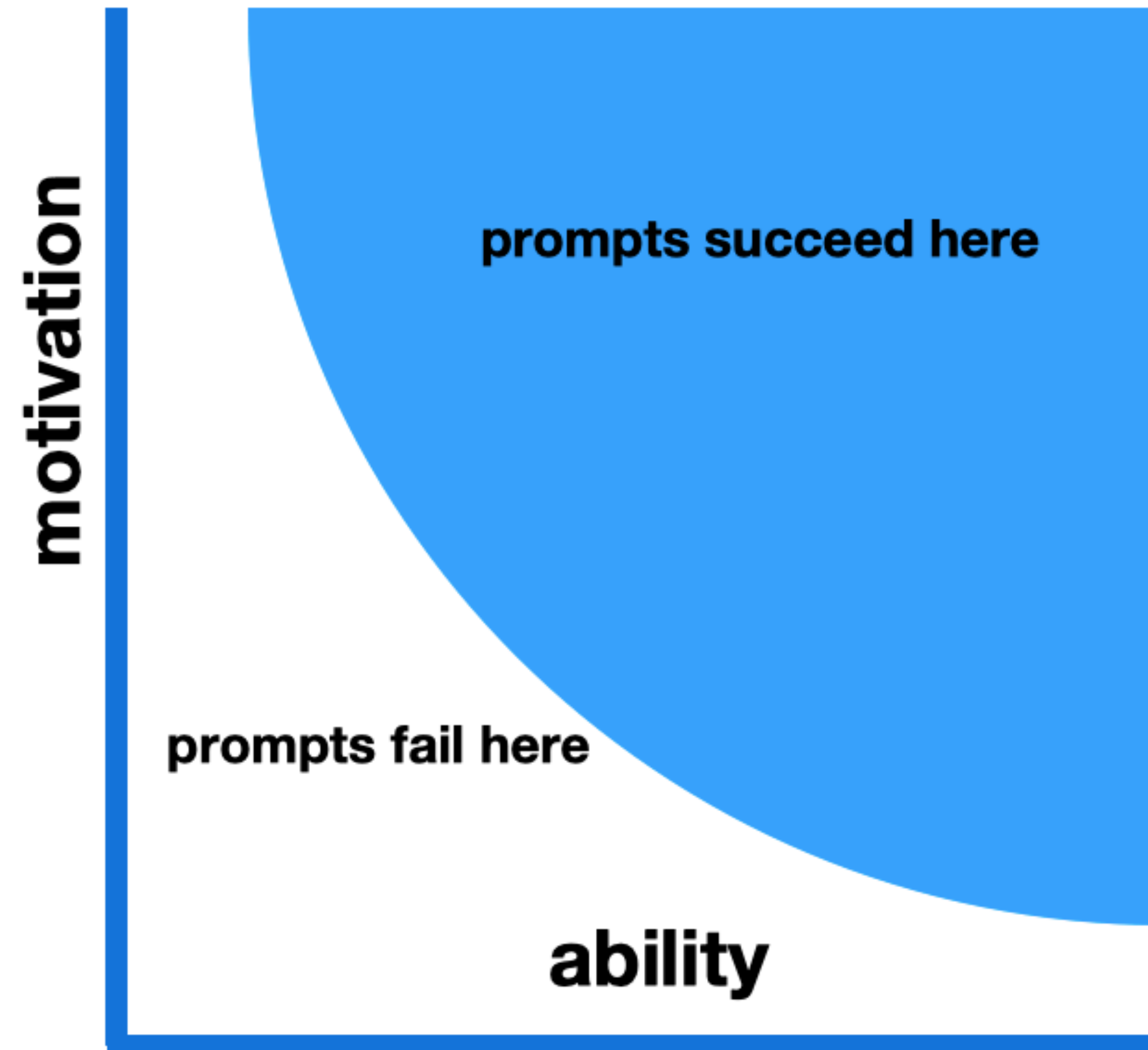
Intervention Mapping



Fogg Behaviour Model



Fogg Behaviour Model



- ⦿ Time
- ⦿ Money
- ⦿ Physical effort
- ⦿ Mental effort
- ⦿ Social norm deviation
- ⦿ Routine

Counter Persuasion: RaDaR



Recognize the attempt

Distance yourself

Rationalize options

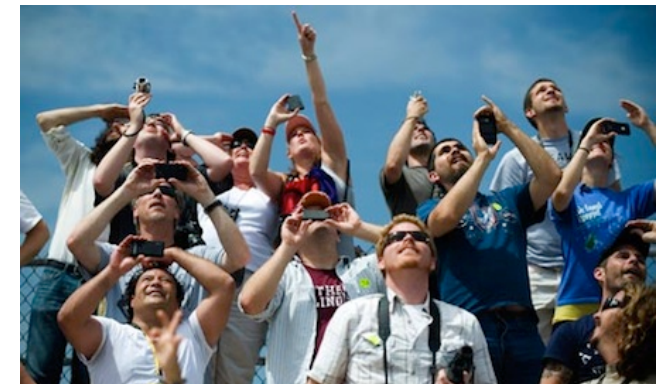
Wrap-up



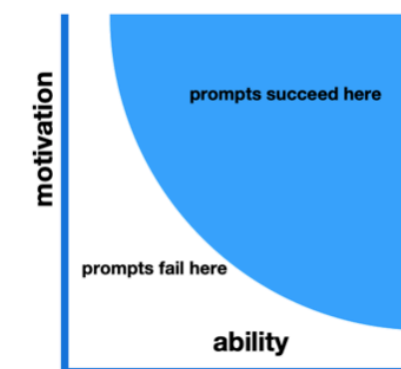
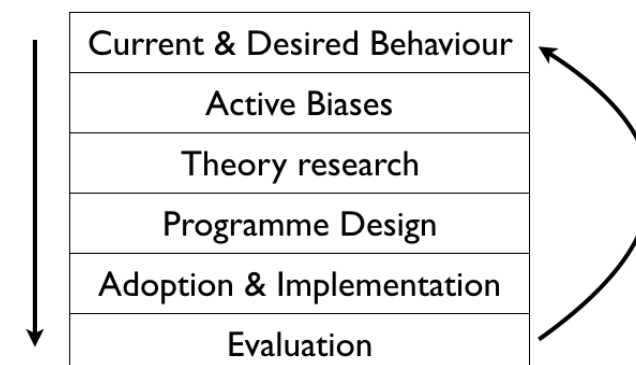
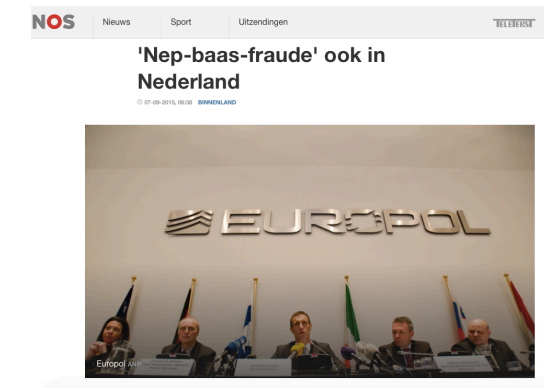
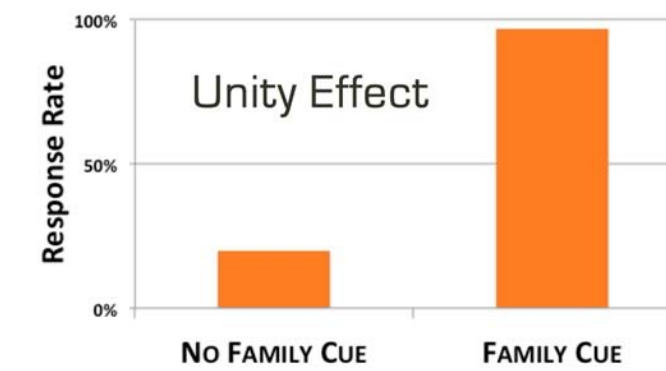
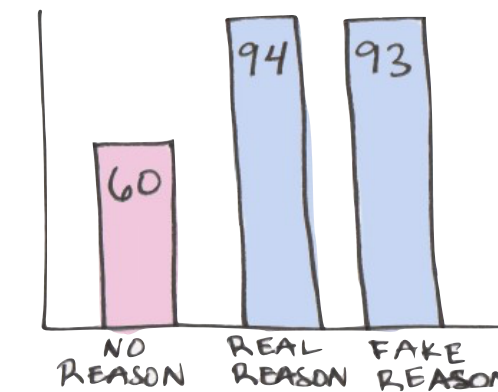
Chief Psychology Officer

35000+

95-99%

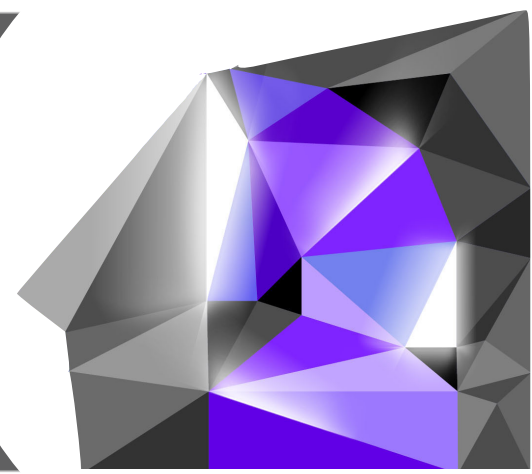


In for a penny,
in for a pound



- Time
- Money
- Physical effort
- Mental effort
- Social norm deviation
- Routine

Recognize the attempt
Distance yourself
Rationalize options



More information



workshops, consultancy, projects (CPO)

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THANKS

mischa@greymatters.nl

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