



# Hacking The Brain For Fun And Profit

@khae

DEEPSEC



Who Am I?

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DATEV eG  
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# **DISCLAIMERS**

**INFORMATION IN THIS TALK ONLY APPLIES TO  
PARTICIPATING REALITIES AND DIMENSIONS.**

**PLEASE SHARE FREELY.**

# IN CASE YOU NEED (OR WANT) TO LEAVE EARLY:

- You are shaping your perception of reality (and thus can change it)
- Your brain on autopilot will limit your choices
- Creative thinking and tuning the brain gives better results in your work, whatever it is.



AC...



"  
TEARER  
TLW

QUESTION  
EVERYTHING  
WHY?

# **PART IV**

## **YOUR BRAIN IS LYING TO YOU.**

# A BANDWIDTH PROBLEM



**ZUHAUSE PLUS**

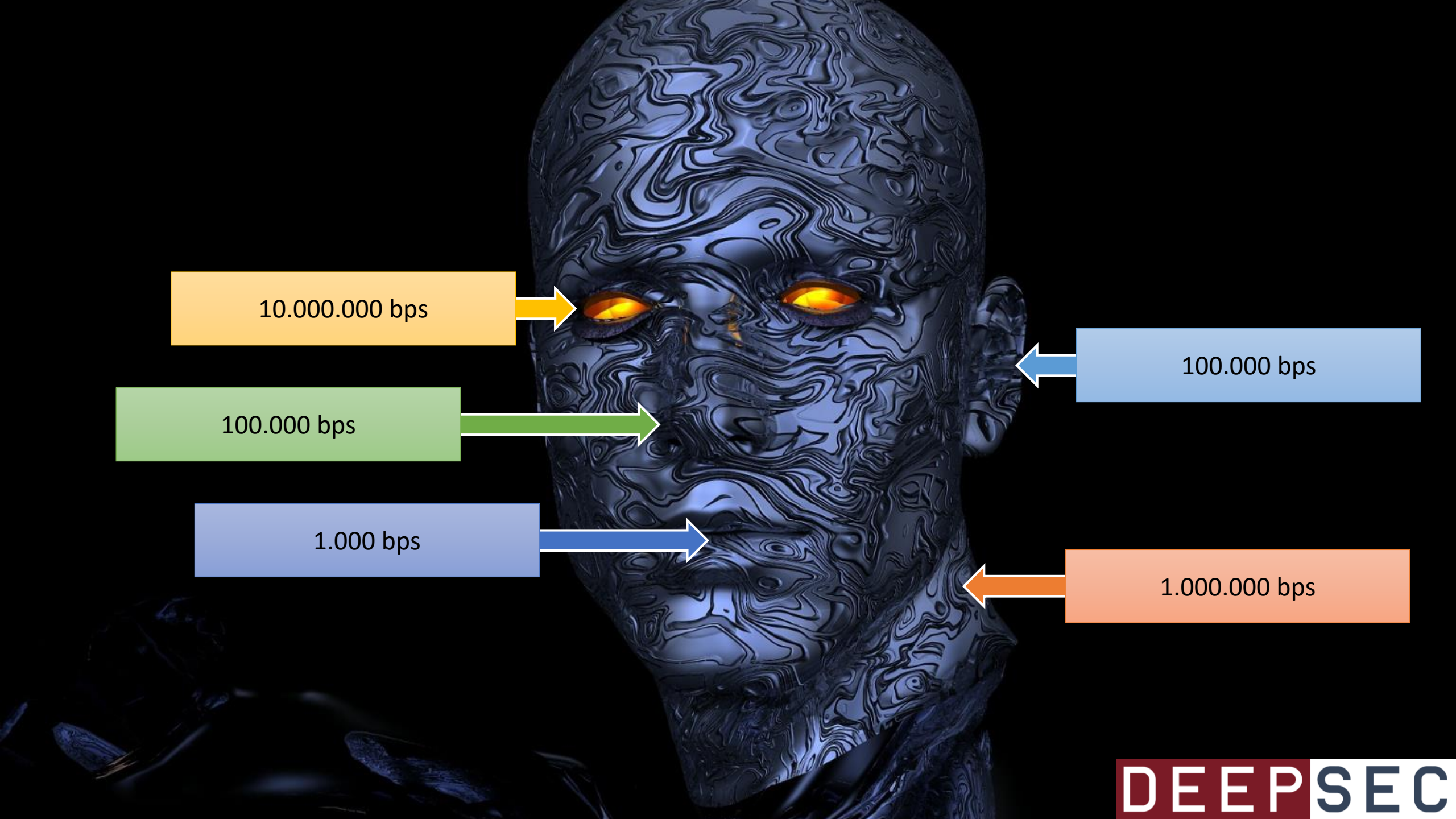
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10.000.000 bps

100.000 bps

1.000 bps

100.000 bps

1.000.000 bps

11.201.000 bits per second =  
10.938 kbit per second =  
10.6 Mbit per second ...

Yay?

*“A new way to analyze human reaction times shows that the brain processes data no faster than 60 bits per second.”*

Source: MIT Review from August 25<sup>th</sup>, 2009

## HYPERJET ENGINE STATUS

LIGHT SPEED

RIDICULOUS SPEED

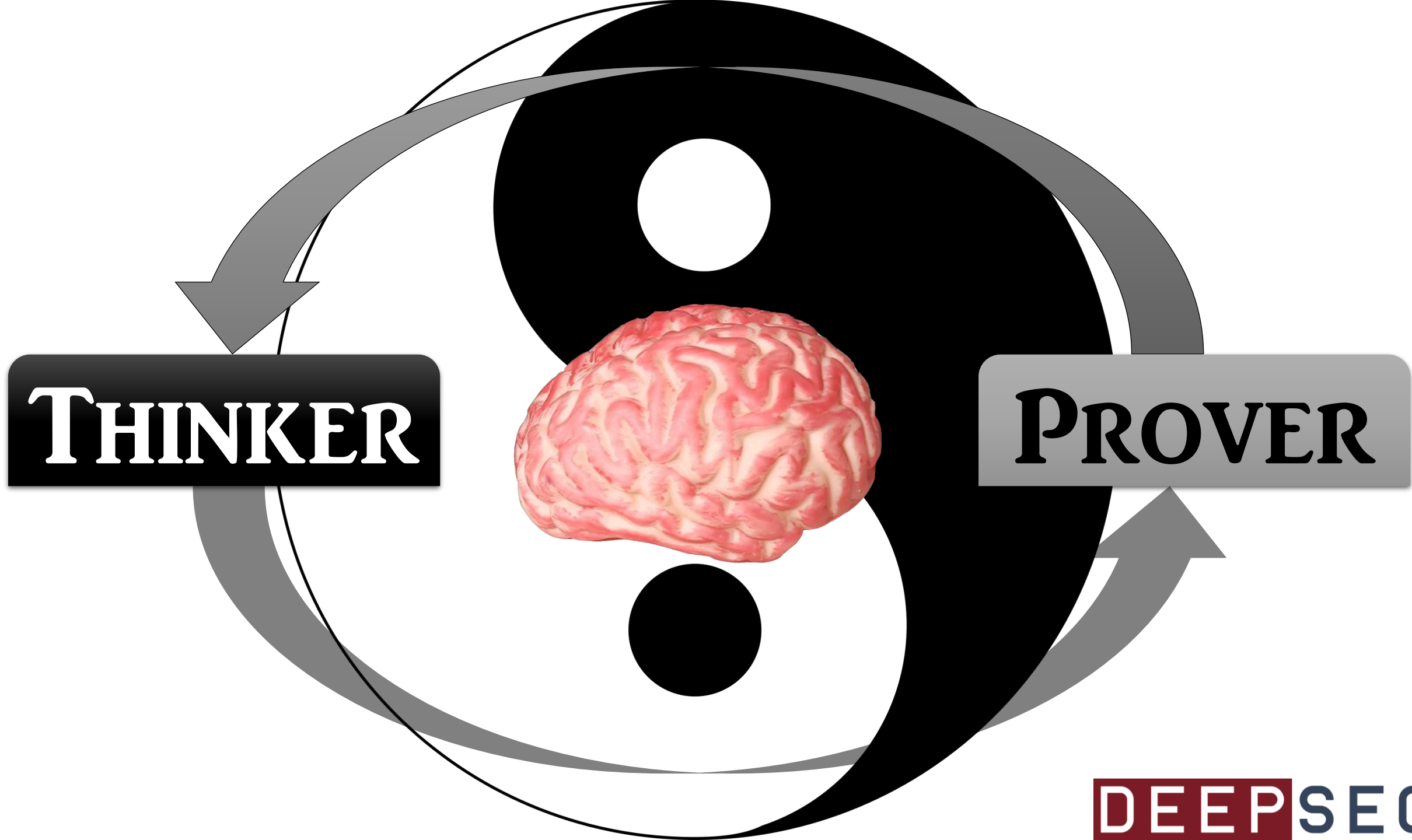
▶ LUDICROUS SPEED

PLAID

Your system can't deliver what your senses promised you. "Up to x Mbit/s", indeed.



# BIASED INTERPRETATION



# WITHHOLDING INFORMATION



Danger?

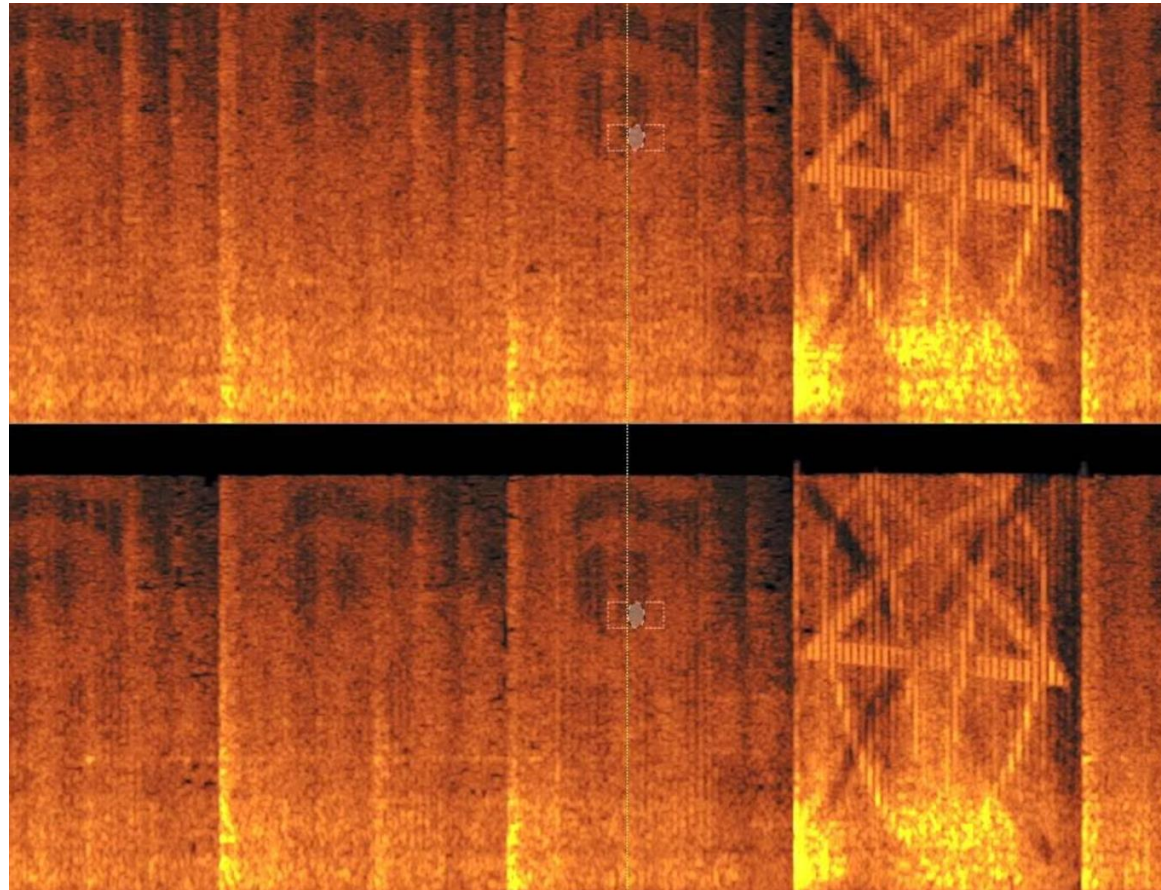
Toilet?  
Hopefully

Food!  
(not hungry)



# HACKING PERCEPTION

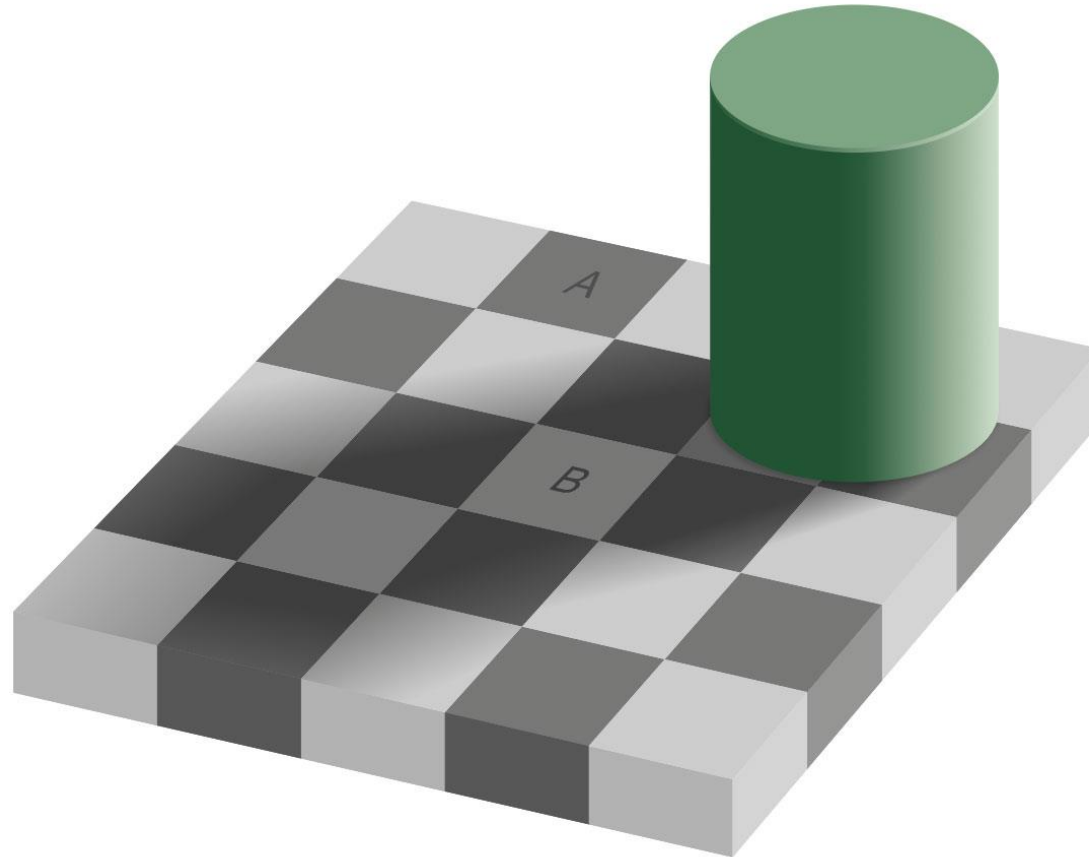
( ILLUSIONS )

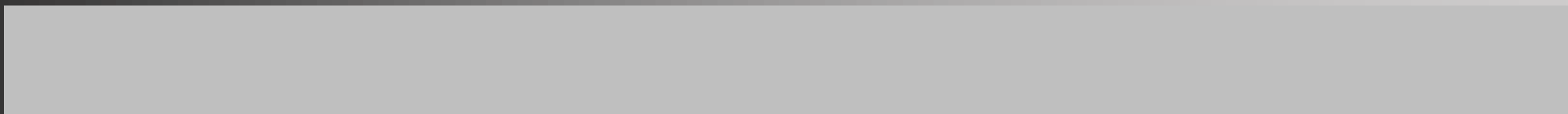


# OPTICAL ILLUSIONS



# A OR B?





# AUDITORY ILLUSIONS

Binaural beats affect our brainwaves directly and can alter moods, behavior, even consciousness.

A binaural beat is created by playing a different tone in each ear, and the interference pattern between the slightly differing frequencies creates the illusion of a beat.

It's intended to be heard through headphones, so there's no cross-channel bleed across both ears.

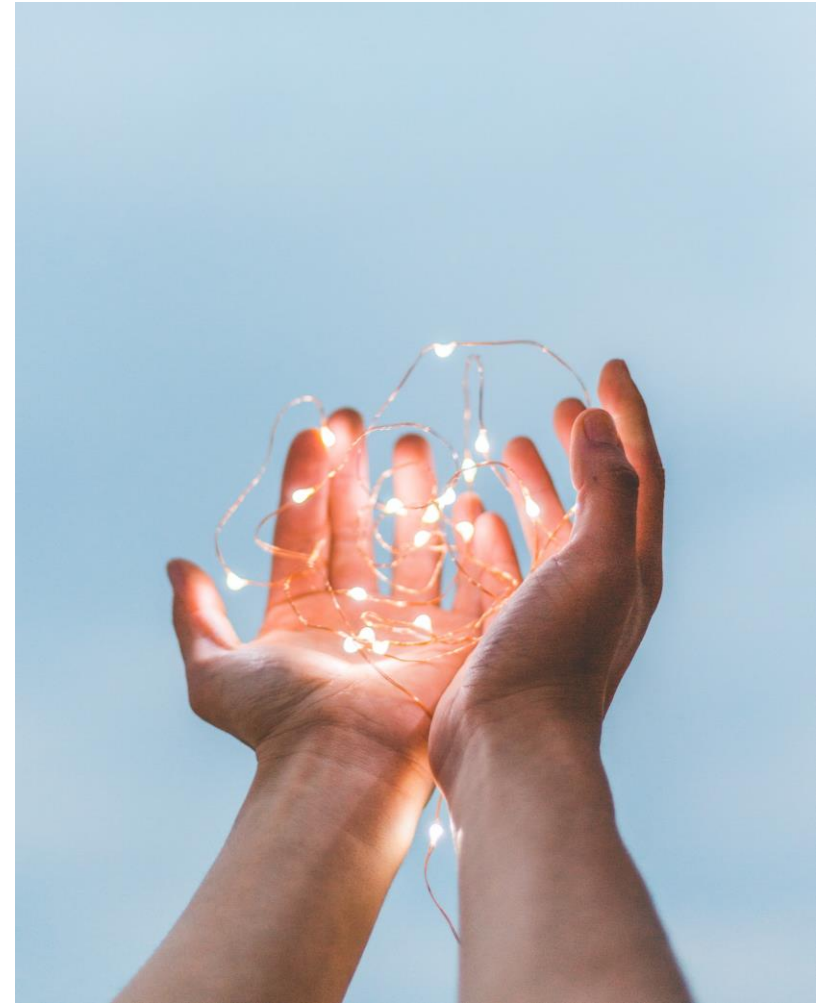


# OLFACTORY ILLUSIONS

**Phantosmia** (olfactory hallucinations) -  
smelling an odor that is not actually there.  
(Wikipedia)



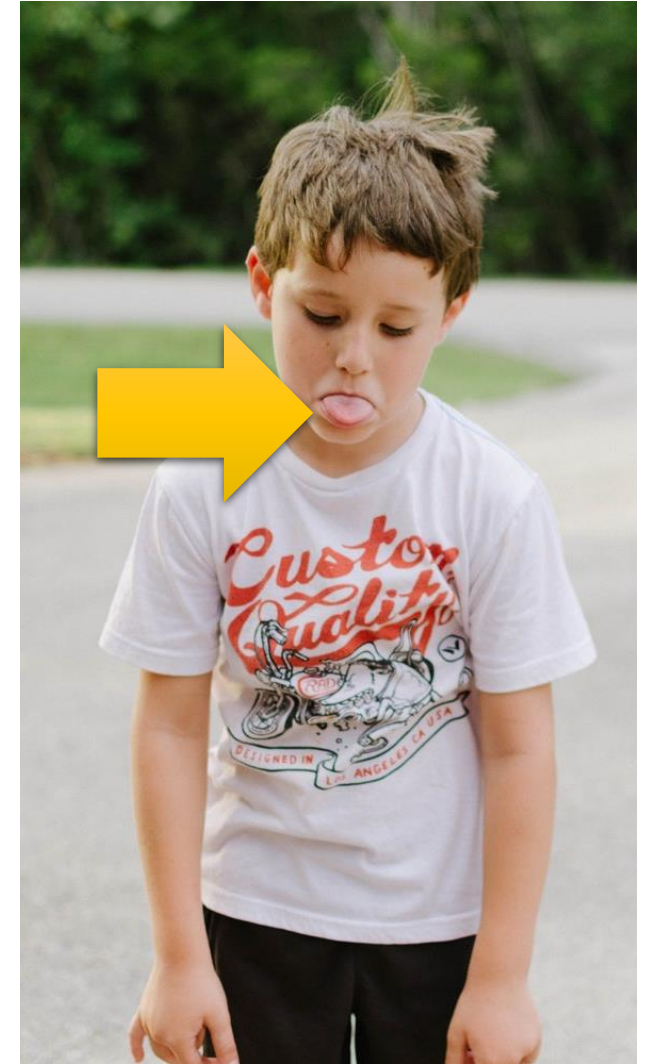
# TACTILE ILLUSIONS



# GUSTATORY ILLUSIONS



**Synsepalum dulcificum** is a plant known for its berry that, when eaten, causes sour foods (such as lemons and limes) subsequently consumed to taste sweet. This effect is due to miraculin. Common names for this species and its berry include miracle fruit,[2] miracle berry, miraculous berry,[2] sweet berry,[3][4][5] and in West Africa, where the species originates, agbayun,[6] taami, asaa, and ledidi. (*Wikipedia*)



**YOUR BRAIN IS A  
(SLIGHTLY RANDOM) FILTER  
WITH DYNAMIC RULES**

**Cool.**

**BUT ...**

**WHERE'S YOUR AUDIT TRAIL?**



# **SOME RECURSION INVOLVED.**



<http://twistandloop.blogspot.nl>

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# **PART II**

## **DEFENSE MECHANISMS**

**RELAX...**



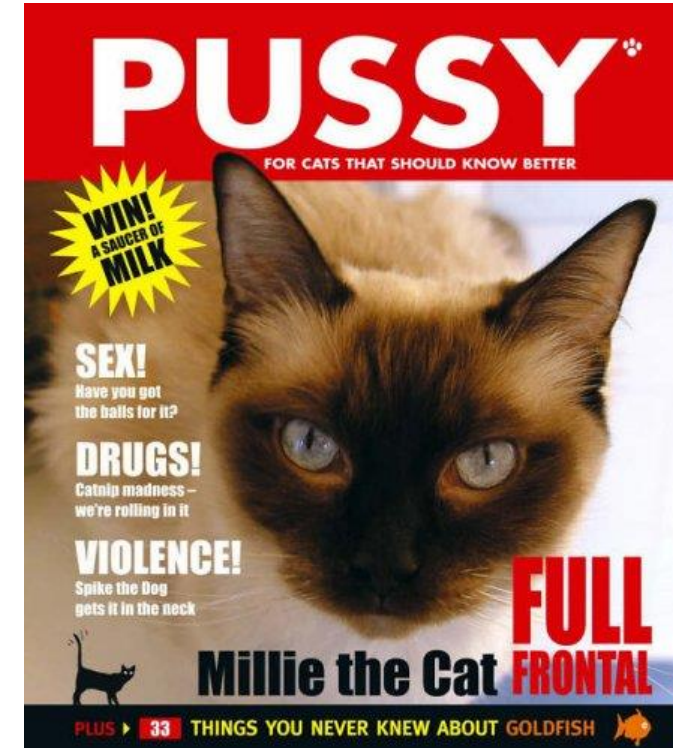
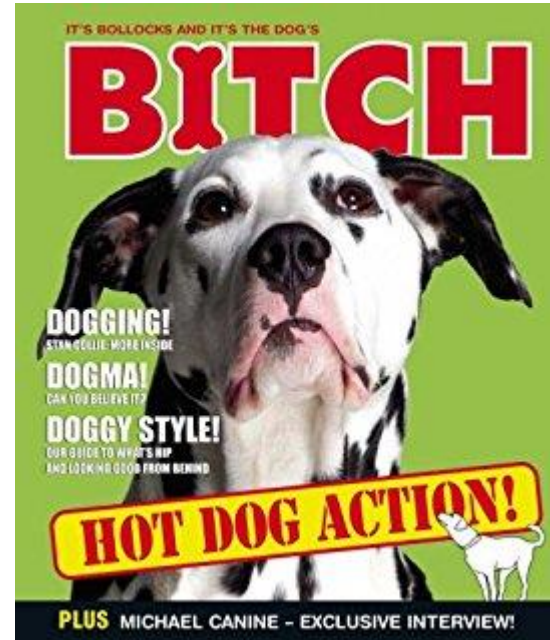
<http://www.derekarnold.com>



# BACK TO INNOCENCE!



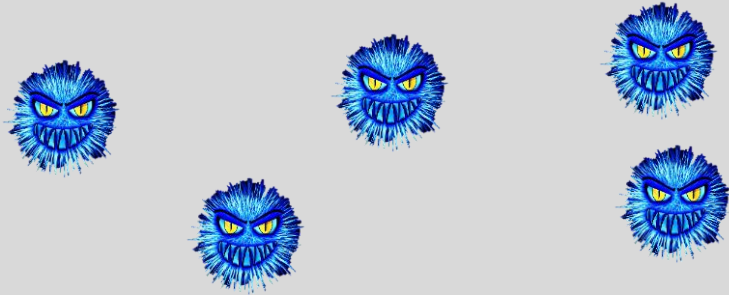
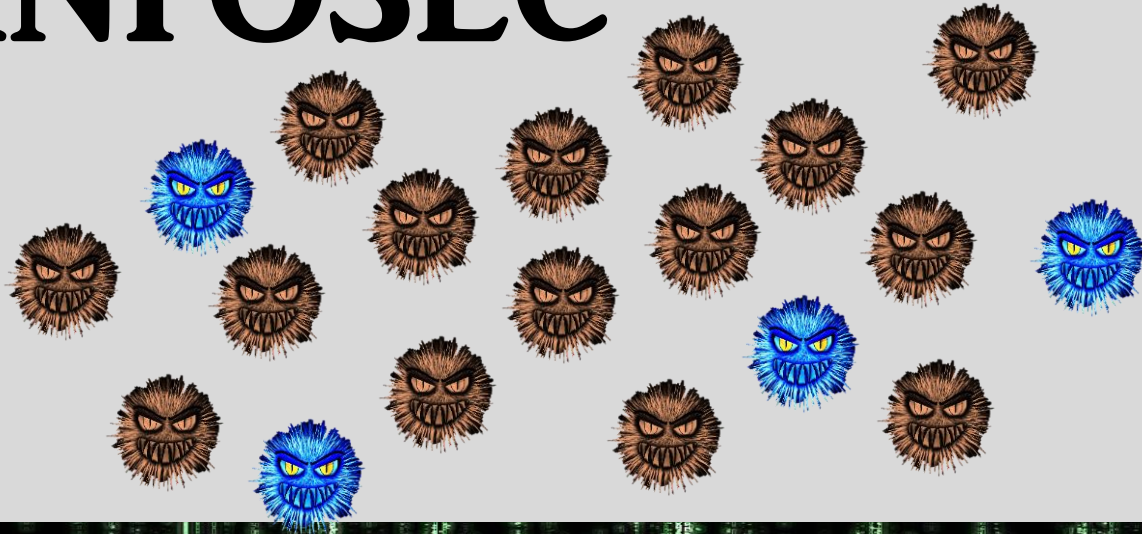
**(WE ALL KNOW  
WHERE THIS IS  
HEADED)**



[...]

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# INFOSEC



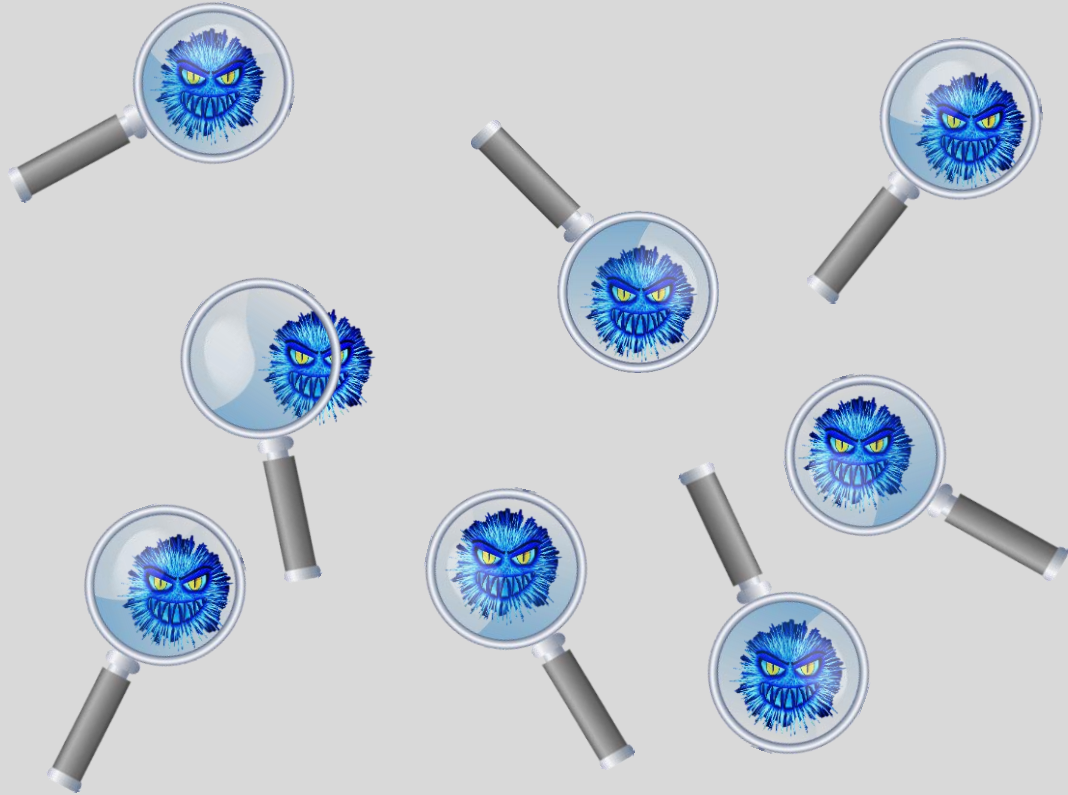
# ANTI-DDoS

# MIND



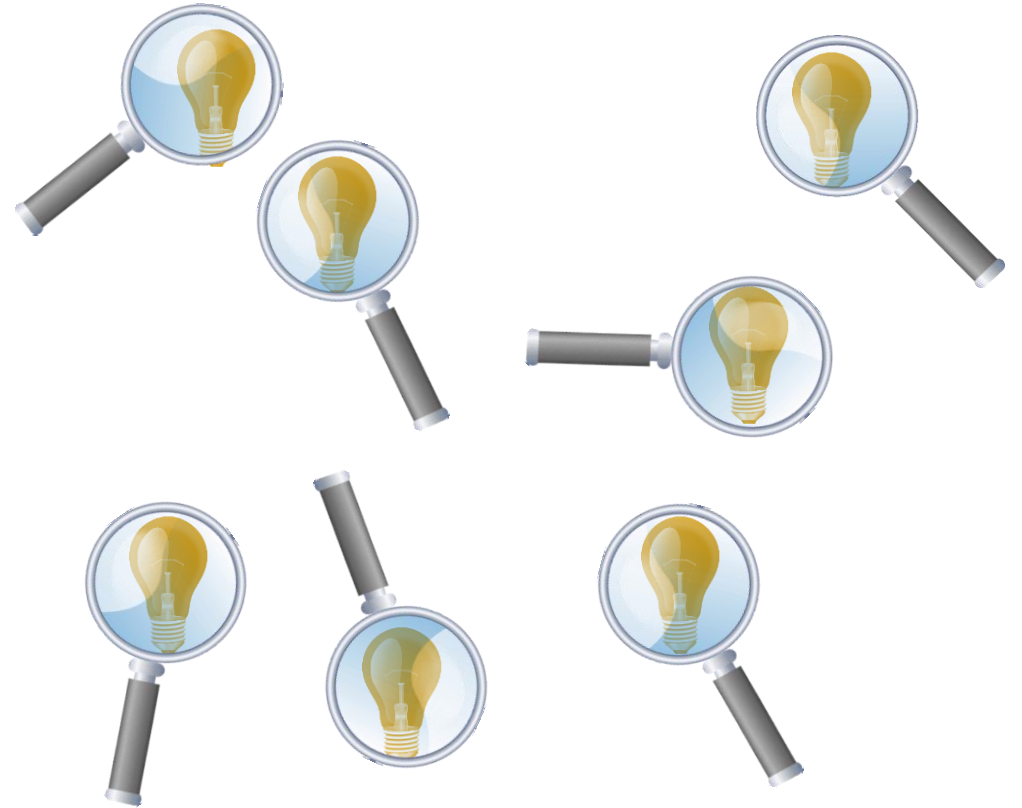
DEEPSEC

# INFOSEC



## IDS / IPS

# MIND



## DEEPSEC

# INFOSEC

# MIND



# DETECTING ANOMALIES

# DEEPSEC

# INFOSEC



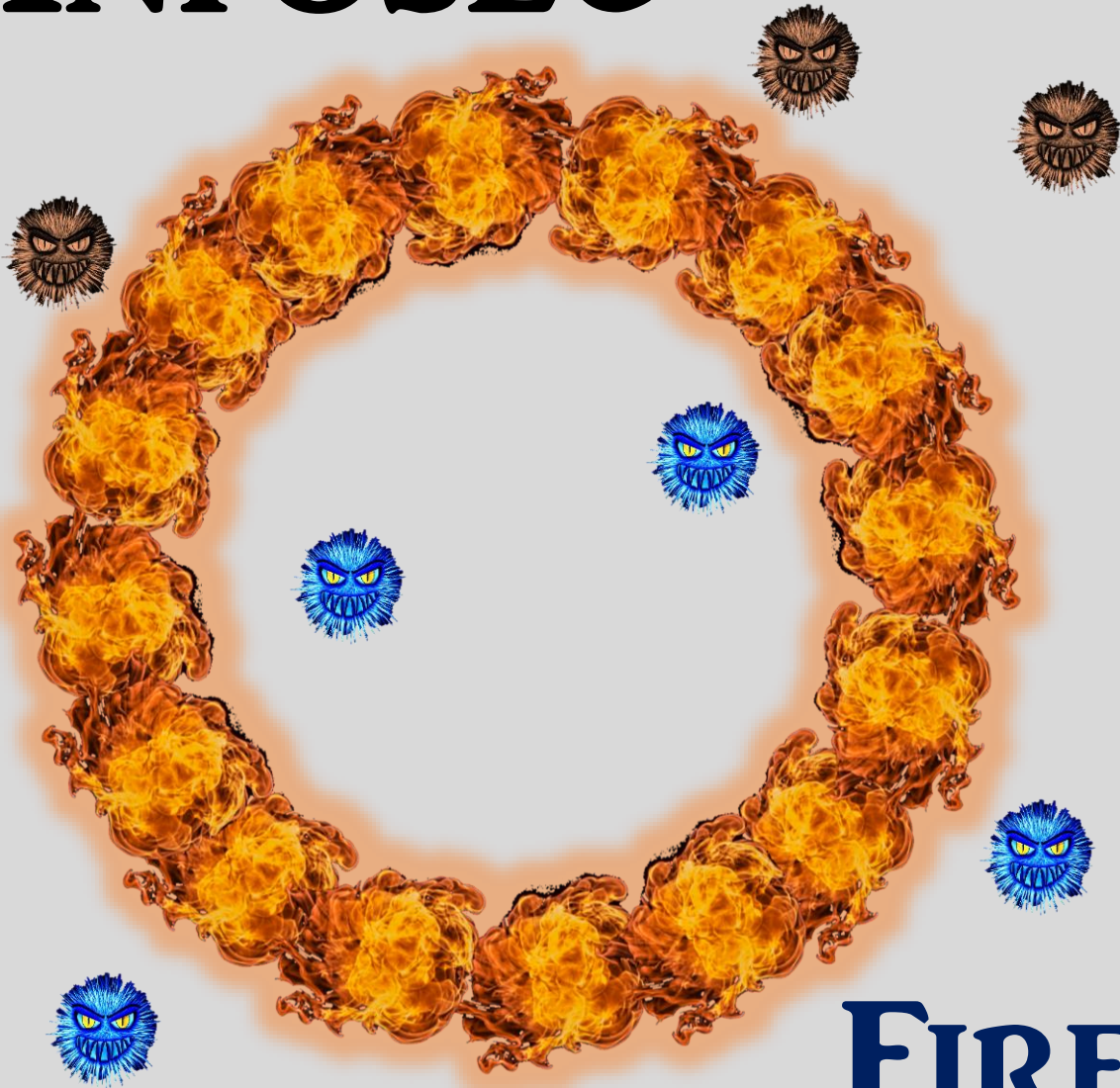
# SANDBOXING

# MIND



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# INFOSEC



# FIREWALLS

# MIND



# DEEPSEC

# ANALOG VS DIGITAL



# I AM HAPPY TO SEE YOU

I am happy to see you

*Even if nobody else is.*

I am happy to see you

*No really. Stop asking.*

I am happy to see you

*Yeah, happy.*

I am happy to see you

*Instead of mail or phone calls.*

I am happy to see you

*But not your stupid friend.*

I am happy to see you

*I am an answering machine.*

I ... am happy to see you

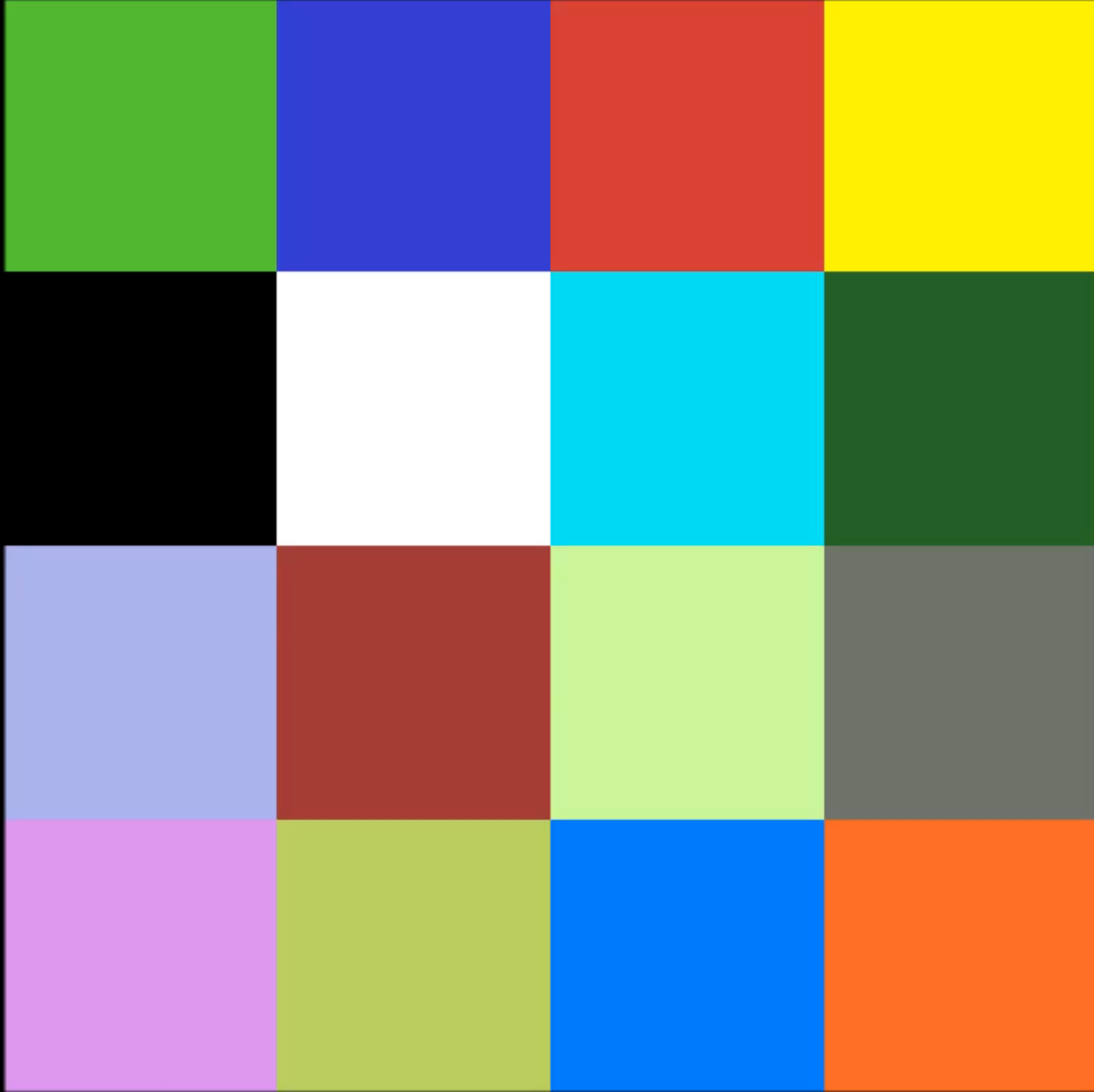
*Are you happy to see me, too?*

I am ... happy to see ... you

*I'm drunk.*

# PUTTING IT TO THE TEST

*Please relax and try to use all 48 Bytes  
of your consciousness.*



# KEY TAKEAWAYS?

- How many squares?
- How many different colours?
- Did you notice whether all the squares were different?
- Can you roughly describe what happened?



# KEY TAKEAWAYS?

- How many people (roughly) were in the video?
- How many cars?
- What was the colour of the dress of the woman in the background?
- Did the truck drive from left to right or vice versa?
- Is this happening in a city or a small village?
- Can we say whether this is happening in Europe or Africa?
- Night / Day?
- Winter or Summer?
- Etc..


# BRAINS ARE NOT „GENERAL PURPOSE“

"Precisely **because** from one instant to the next consciousness can switch from one object to another, it is not perceived as limited in its capacity.

One moment you are aware of the lack of space in your shoes, the next moment of the expanding universe. Consciousness possesses peerless agility.

But that does not change the fact at any given moment you are not conscious of much at all."

- *Tor Nørretranders*



# PART III

## WHY BOTHER?

# RECRUITING FOR CYBER



## Defense Team

- Male
- White
- Certified Ethical Selfless Angel of Cyber
- Max age 25
- Lots of experience
- Must be able to think like his boss
- Beard optional

# RECRUITING FOR CYBER



## Offense Team

- Male
- White
- Certified Ethical Selfless Angel of Cyber
- Max age 25
- Lots of experience
- Must be able to think like his boss
- Beard

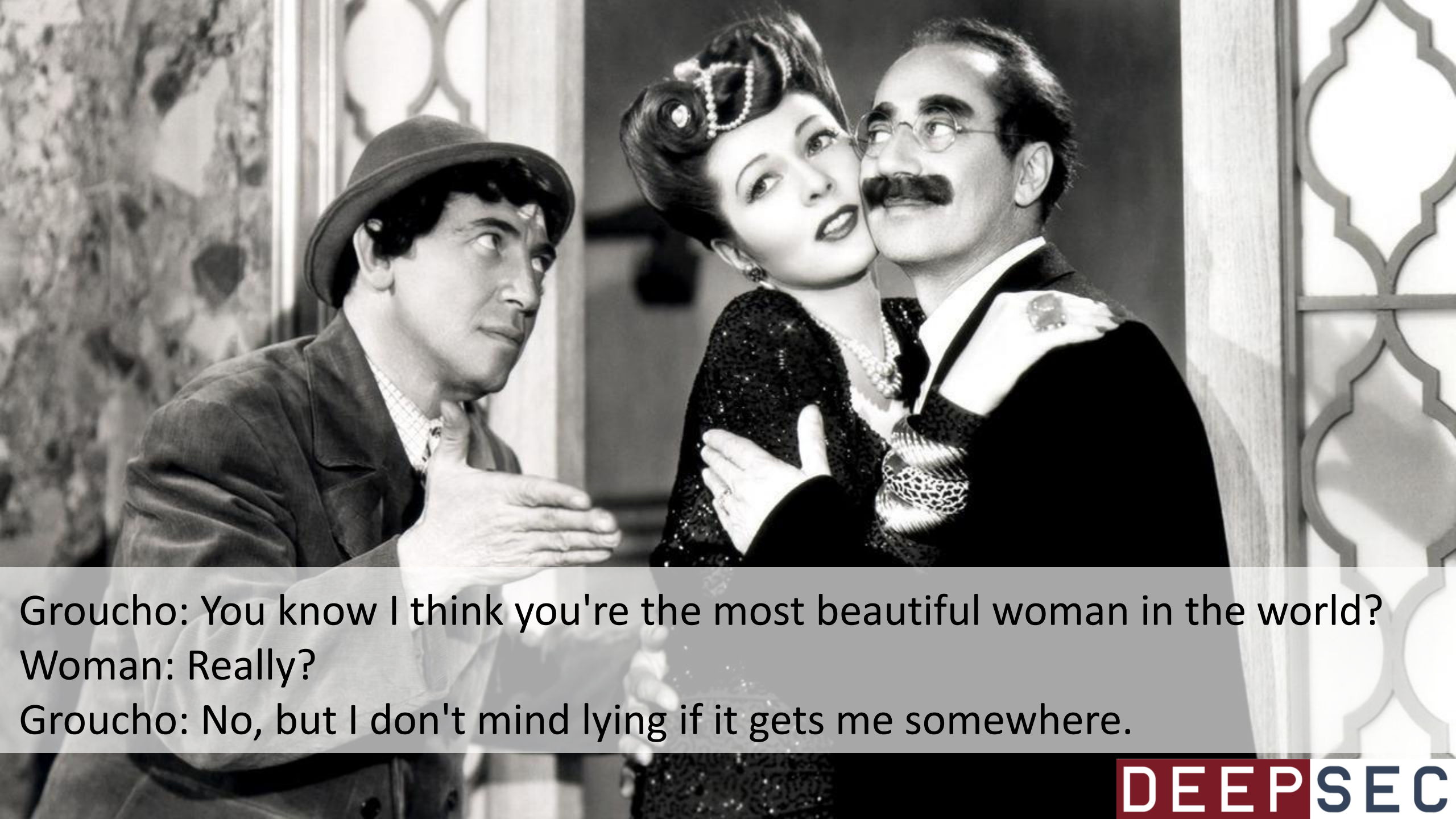
Exaggerated



[https://images-cdn.9gag.com/photo/5994517\\_700b.jpg](https://images-cdn.9gag.com/photo/5994517_700b.jpg)

# SOCIAL ENGINEERING





Groucho: You know I think you're the most beautiful woman in the world?

Woman: Really?

Groucho: No, but I don't mind lying if it gets me somewhere.

# UNDERSTANDING YOURSELF BETTER



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# DOING THINGS DIFFERENTLY





Ghost Army

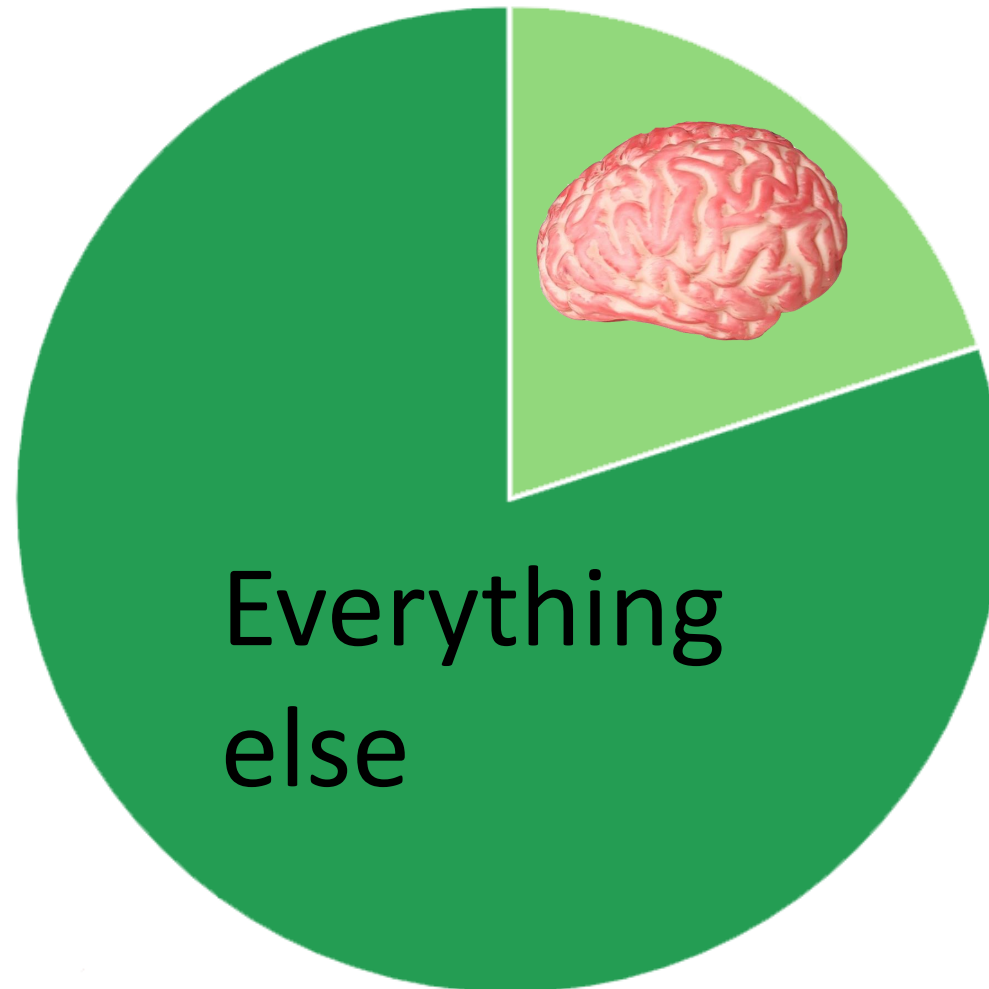


<https://goo.gl/HyHYLx>

23rd Headquarters Special Troops

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# LOSING WEIGHT



# **PART IV**

## **TOOLS**



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**DON'T BE AFRAID TO  
OFFEND YOURSELF.**



**AVOID OFFENDING  
OTHERS, PLEASE.**

# **PART V**

## **PITFALLS & CONCLUSIONS**

## **Being scientific:**

There are some results and facts which are counter-intuitive, but still true.

## **Mind Hacker:**

My personal perception leads me to a different assumption, therefore this aspect of the model seems wrong to me.

## **Idiot:**

The earth is flat because I believe it.

*It's a thin line.*



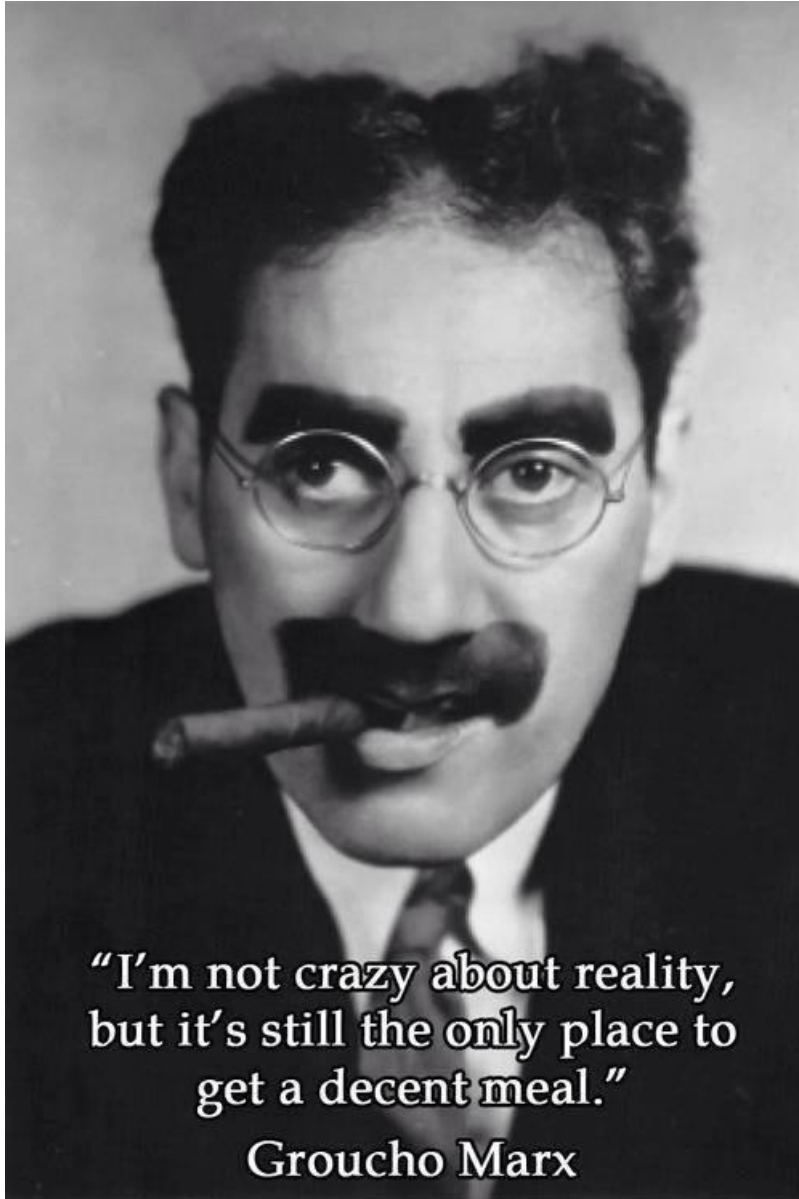
**FREEDOM OF CHOICE**

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# THE RABBIT HOLE GOES EVEN DEEPER



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*"I'm not crazy about reality,  
but it's still the only place to  
get a decent meal."*

Groucho Marx

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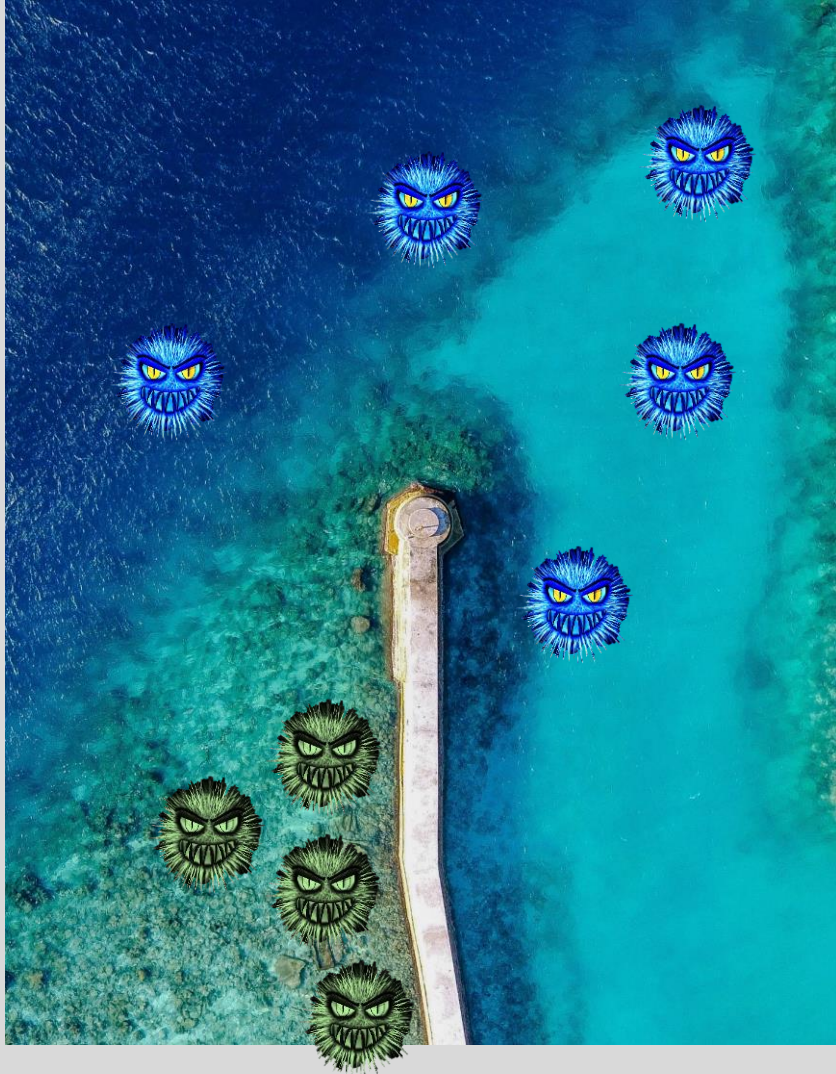
**THANK YOU FOR YOUR TIME!**

Questions?

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# INFOSEC



# MIND



# DLP

# DEEPSEC