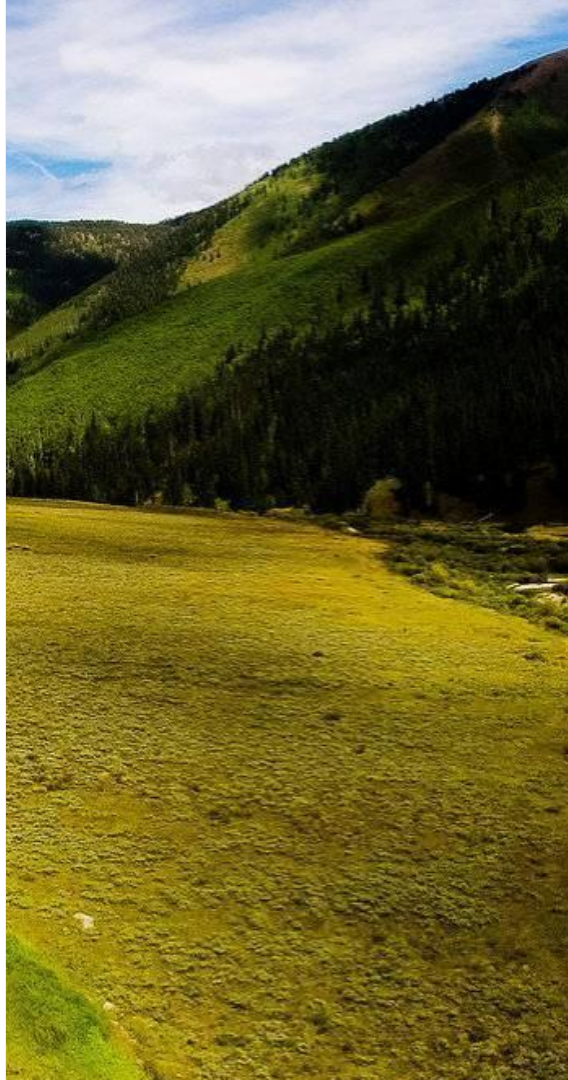


Fear: Security's Weakest Link

Melanie Ensign, Security + Privacy Communications

Uber





What happens in your brain determines what you think, feel, say, and do.



Here we go.

Cool brain stuff coming...

Limbic System



Amygdala: Emergency Response

Hypothalamus: Stress hormones

Hippocampus: Focus

Experiencing Fear

and losing control.

Fear wreaks havoc on the brain

1

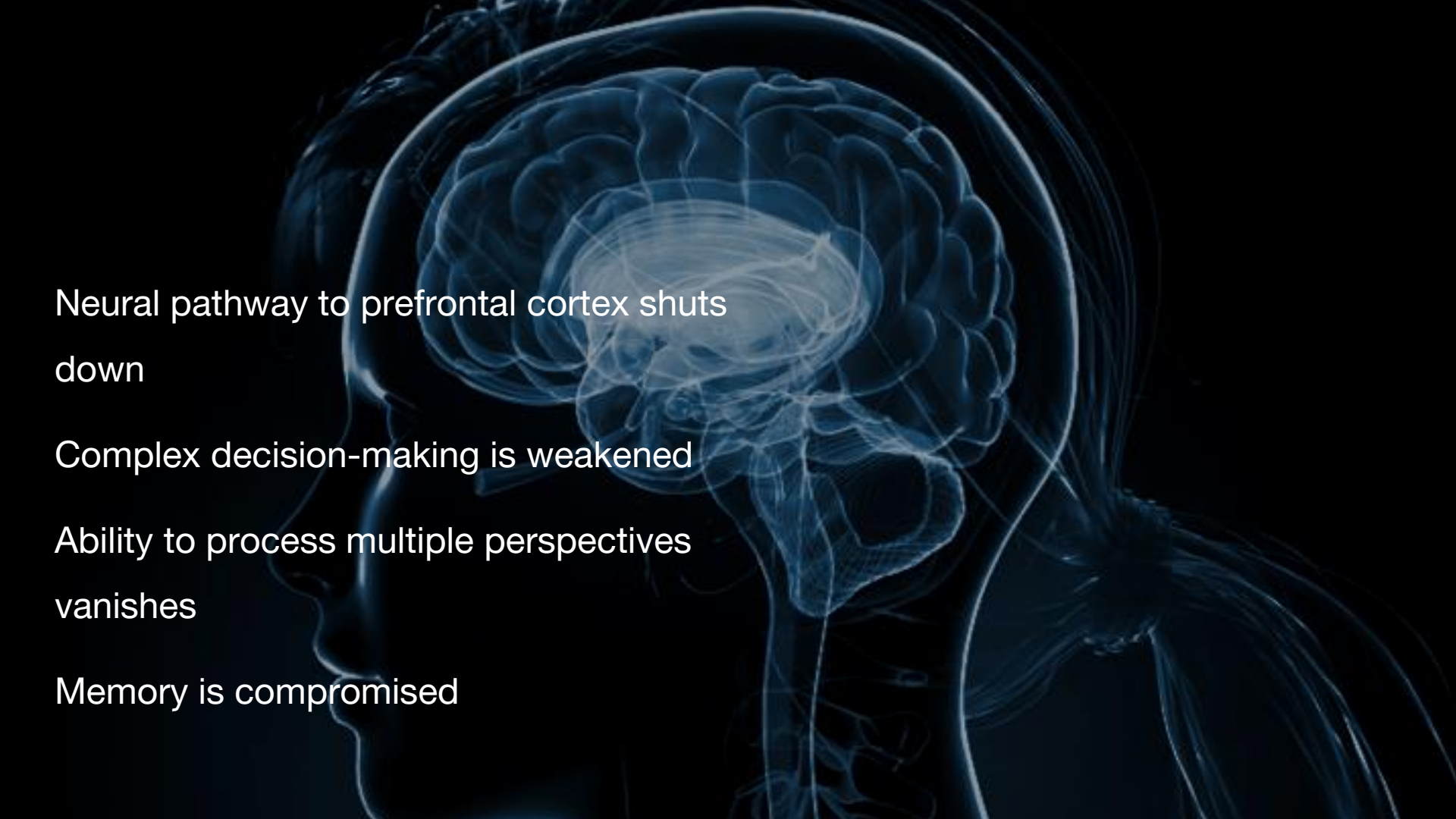
Stress hormones flood
your system

2

Increased heart rate or
sweaty palms

3

Shallow, rapid breathing



Neural pathway to prefrontal cortex shuts
down

Complex decision-making is weakened

Ability to process multiple perspectives
vanishes

Memory is compromised

Habituation of Fear

means no one cares.

Half Life of Fear

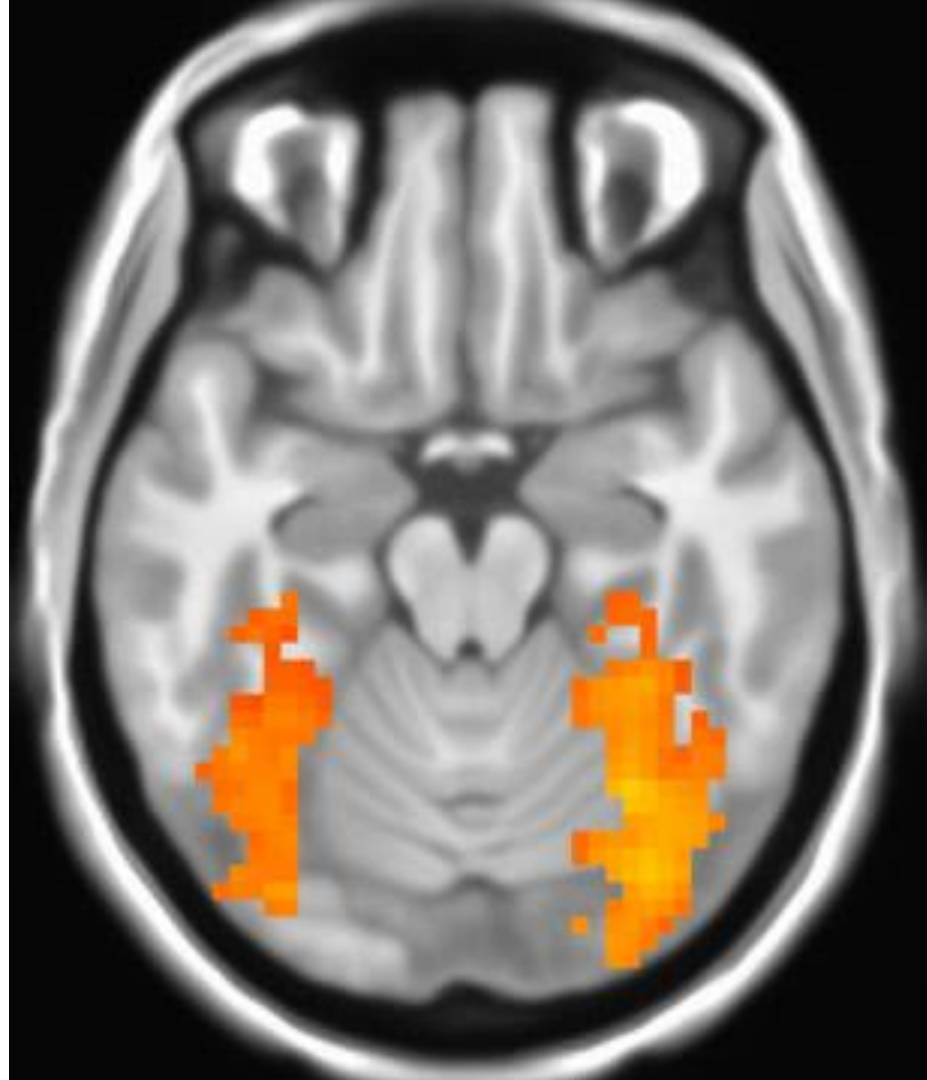
Panic  Disregard

Tuning Out

BYU Neurosecurity Lab

Longitudinal study on
habituation of security
warnings

MIS Quarterly, June 2018





Communicating with Fear

Stop it.





Image Credit: Universal Pictures



Vulnerable, Endangered, & Critically Endangered Shark Species

pelagic thresher | bigeye thresher shark | common thresher | Bali catshark | New Caledonia catshark | bluegrey carpetshark | borneo shark | pondicherry shark | smooth tooth blacktop shark | oceanic whitecap shark | dusky shark | sandbar shark | night shark | sand tiger | great white shark | gulper shark | dumb gulper shark | lowfin gulper shark | deepwater spiny dogfish | basking shark | school shark | southern saw tail catshark | ganges shark | New Guinea river shark | spear tooth shark | irrawaddy river shark | brown shy shark | sickle fin weasel shark | snaggletooth shark | Papuan epaulette shark | hooded carpet shark | whitefin topeshark | honeycomb izak | white spotted izak | dagger nose shark | shorten mako | longfin mako | broadfin shark | porbeagle | striped smooth-hound | common smooth hound | narrow nose smoothhound | humpback smoothhound | tawny nurse shark | sharp tooth lemon shark | small-tooth sand tiger shark | angular rough shark | shirttail nurse shark | whale shark | lizard catshark | flapnose houndshark | scalloped hammerhead | great hammerhead | small eye hammerhead | smooth hammerhead | piked dogfish | Philippines spurdog | sawbuck angelshark | eastern angel shark | Argentine angel shark | Taiwan angel shark | hidden angelshark | Japanese angelshark | clouded angelshark | smooth back angel shark | angular angelshark | angel shark | ocellated angelshark | zebra shark | sharpen houndshark | spotted houndshark

Neutralizing Fear

restores control and makes your brain “stickier” for learning.

Midbrain



Ventral tegmental - Dopamine Center

Nucleus accubens - Cognitive Processing

Caudate - Cognitive Functions

**Curiosity is the
antidote to fear.**



Image Credit: Calypso Star Charter



Image Credit: Calypso Star Charter

Dr. Raj Sekhar Aich & Soosie Lucas

2

Years

150

Divers

20

Countries

“

Neurons that fire
together, wire together.



The brain is an organ that *learns*.

The brain is designed to change.

Experience-Dependent Neuroplasticity

Rick Hanson, Ph.D.

1 trillion
support cells

80-100
billion
neurons

5e+14
synapses

Active
synapses
become
more
sensitive

New
synapses
grow
within
minutes

Less active
connections
wither away

Your
experiences
matter





Image Credit: Stuart Cove's

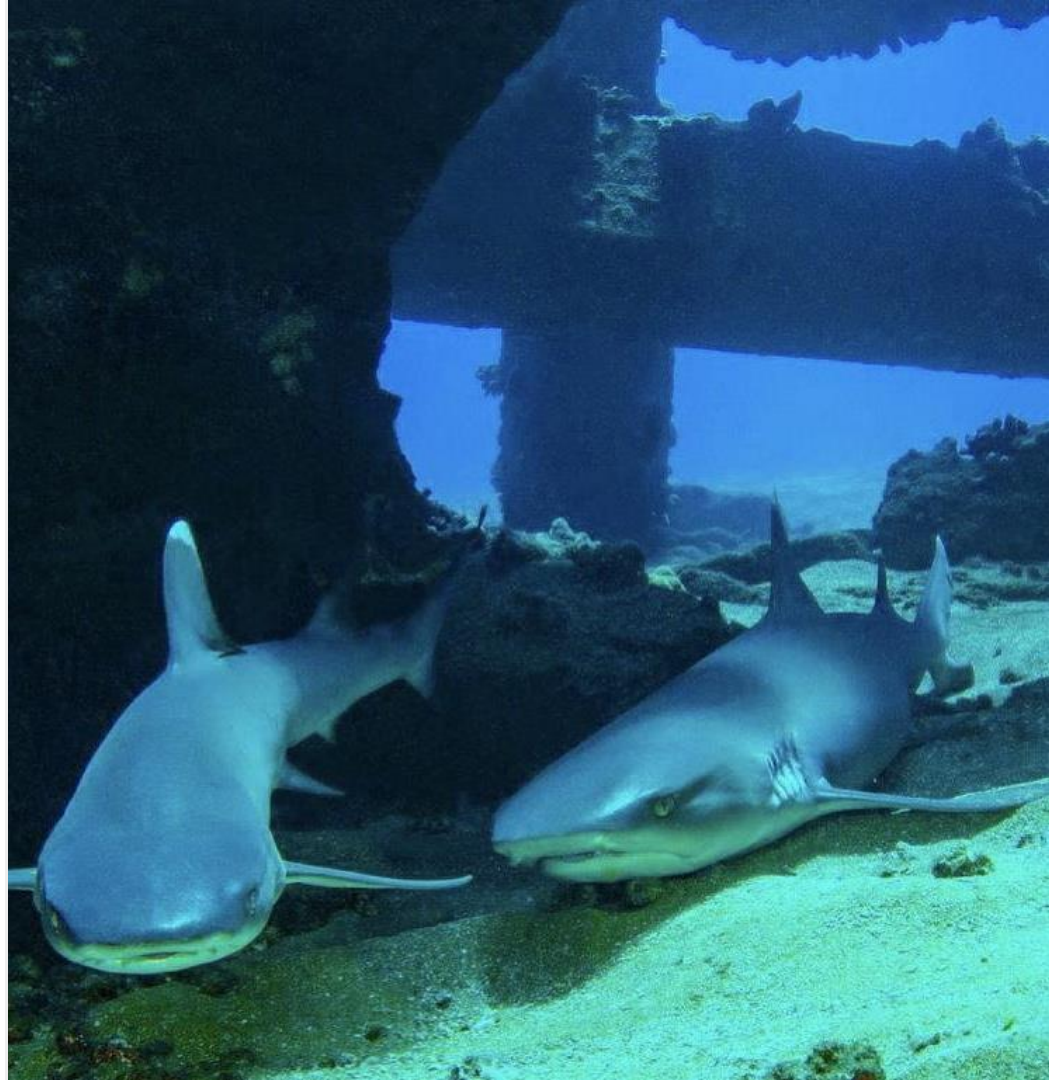
“

When you're on top of the water, and you just see the fin, I think it's more scary because it's the unknown.

Calm, peaceful, and beautiful.

Inquisitive and curious.

Moving experience, and there was no fear at all.



“

The value of sharks' lives is now widely understood to be more important than their value as products. And when you have sharks in the area, it's a sign of good health.

Sylvia A. Earle



SCUBA News



Home > science > Shark Diving Tourists spend \$25m in Australia

Shark Diving Tourists spend \$25m in Australia

By Jill Studholme - 13 September 2017

Thresher sharks included in int'l eco trade pact



SHARES: **16**
VIEW COMMENTS

By: *Morexette B. Erram*, October 4th, 2017 03:27 PM

ANIMALS



The scuba diving industry in Sabah is worth some RM380mil and live sharks are a major attraction. Photos: Filepic

Sharks are worth more alive

JULY 29, 2017

ANIMALS, ENVIRONMENT, LIVING, TSOL - ENVIRONMENT

BY WONG LI ZA

Bring it home

with your own “cage diving.”

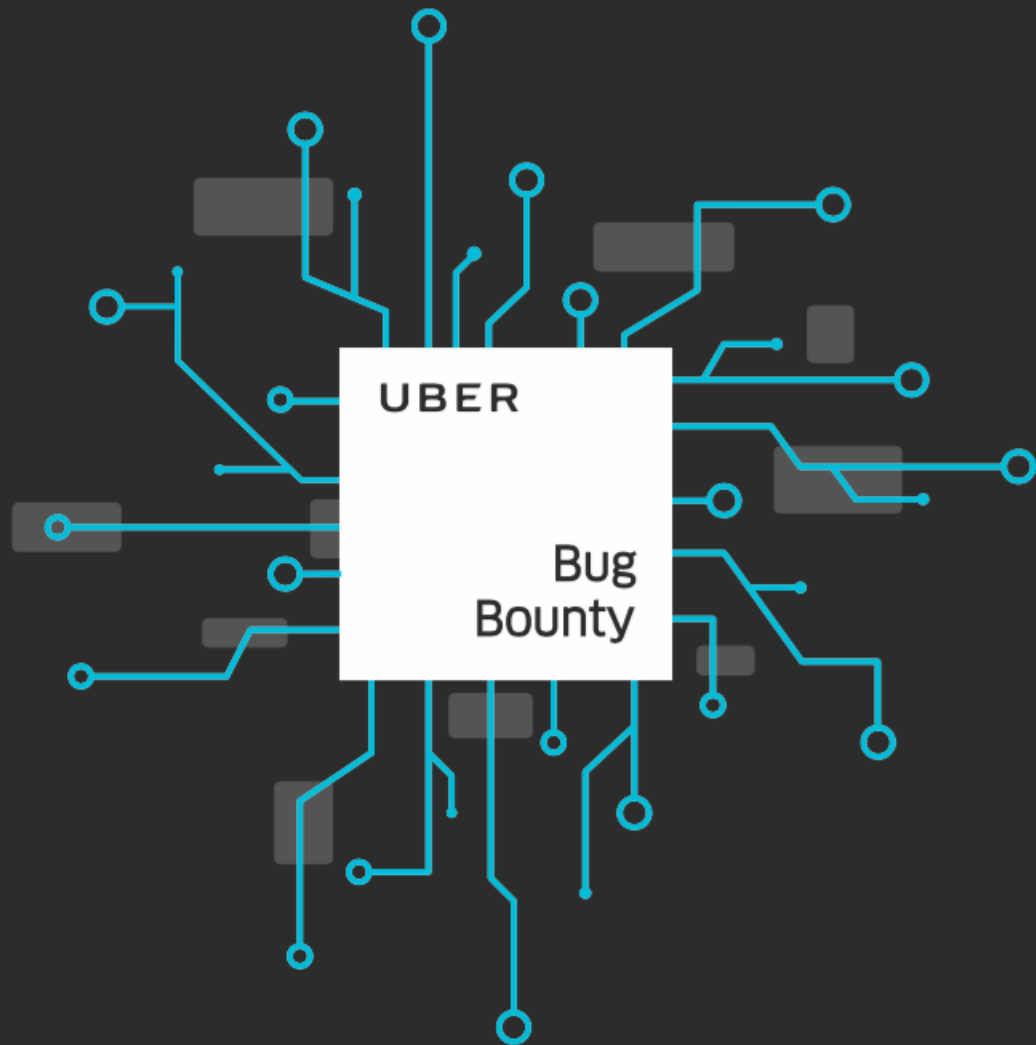
Cage Diving for #infosec

Providing this:

- Access to bug reports
- Pay out meetings
- Triage sessions

Teaches this:

- Risk severity
- Technical concepts
- Remediation process





Thank you.

Resources

“Tuning Out Security Warnings: A Longitudinal Examination of Habituation Through fMRI, Eye Tracking, and Field Experiments,” BYU Neurosecurity Lab: <https://neurosecurity.byu.edu/>

Encounters of the Great White Shark and Caged Humans in New Zealand:
<https://www.sharks.org/blogs/shark-culture/encounters-of-the-great-white-shark-and-caged-humans-in-new-zealand>

Hardwiring Happiness, Rick Hanson, Ph.D, 2013

Calypso Star Charter: <https://sharkcagediving.com.au/>

Maui Diving: <http://mauidiving.com/>