



# THE PSYCHOLOGY OF RISK

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**“Fitting the Pieces Together”  
Conference**

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## Today's Objectives

1.

Learn how to recognize and narrow the gap between perceived risk and actual risk

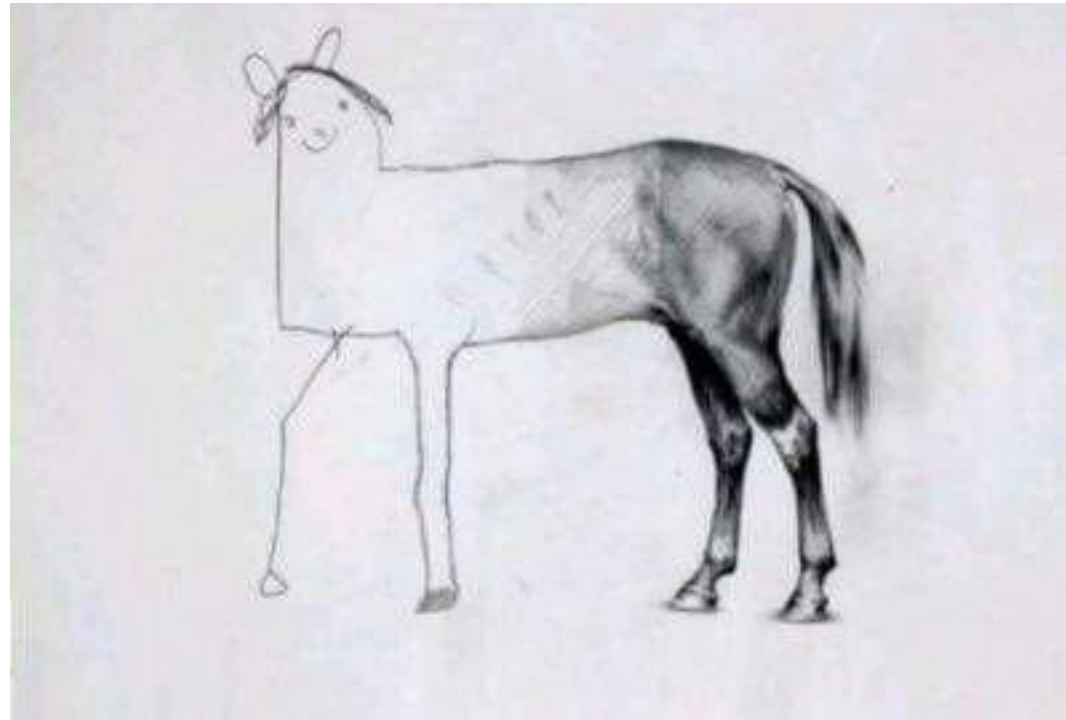
2.

Be able to recognize the most common types of cognitive bias that can interfere with decision-making and risk analysis

3.

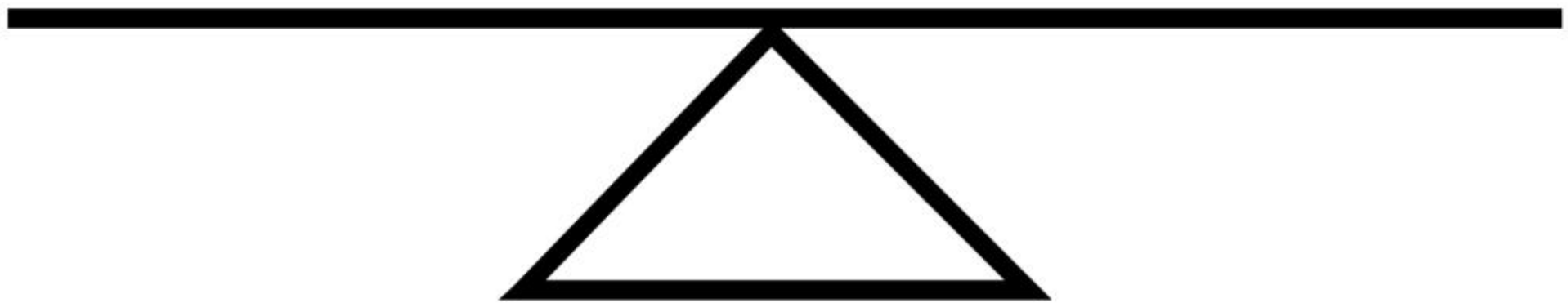
Learn how to apply techniques to overcome/compensate for cognitive bias and other factors that can skew our perception of and response to risks

When a Deadline is Approaching...



**Risk**

**Reward**



# System 1 & System 2 Thinking



## Two Thinking Systems Running in Our Brains

These are the “operating systems” that run your brain’s decision-making processes

It’s important to understand how and when each one is working/running decision-making

# Thinking Fast / Thinking Slow

<b>SYSTEM 1 THINKING</b>	<b>SYSTEM 2 THINKING</b>
Fast	Slow
Instinctive	Deliberative
Emotional	Logical



## THE 2 SYSTEMS



READINGGRAPHICS  
ACTIONABLE INSIGHTS IN ONE PAGE

### System 1 (Fast Thinking)

Continuously scans  
our environment.



Fast but error-prone



Works automatically  
& effortlessly via  
shortcuts, impulses  
and intuition.



### System 2 (Slow Thinking)

Used for specific  
problems, **only if  
necessary**



Takes effort to analyze,  
reason, solve complex  
problems, **exercise  
self-control**



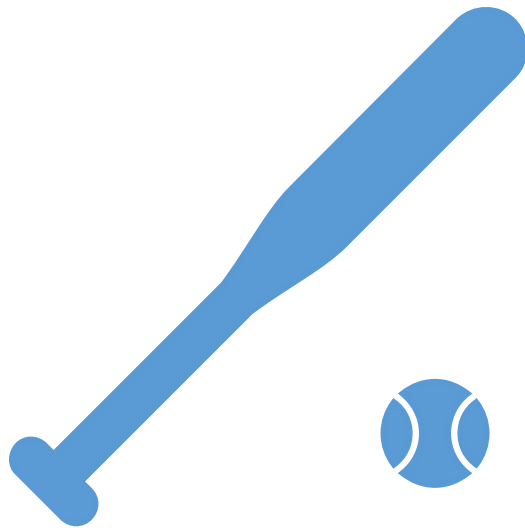
Slow but reliable





# “The Bat & The Ball” Problem

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- A bat and a ball cost **\$1.10** total
- The bat costs **\$1.00** more than the ball
- How much does the ball cost?

# MENTAL SHORTCUTS

- *Intuition* - the ability to understand something immediately, without the need for conscious reasoning.
- *Heuristics* - mental shortcuts to problem-solving or learning; based on previous experience; not always reliable.
- *Framing* - The collection of anecdotes and stereotypes that make up the mental/emotional filters individuals rely on to understand and respond to the world around them.

# Why is This Important in OUR Work?

## System 2 Thinking is Less Error-Prone



When making choices about how to engage with a risk/opportunity, we want to make sure we are using System 2 thinking

## Creating RESPONSE Rather than REACTION



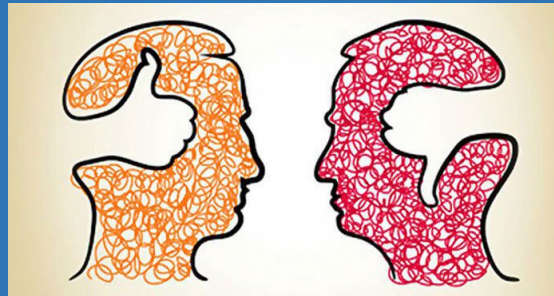
We need to develop cognitive and emotional flexibility/resilience to RESPOND (System 2) versus REACT (System 1)

## Fight, Flight, or Freeze Response

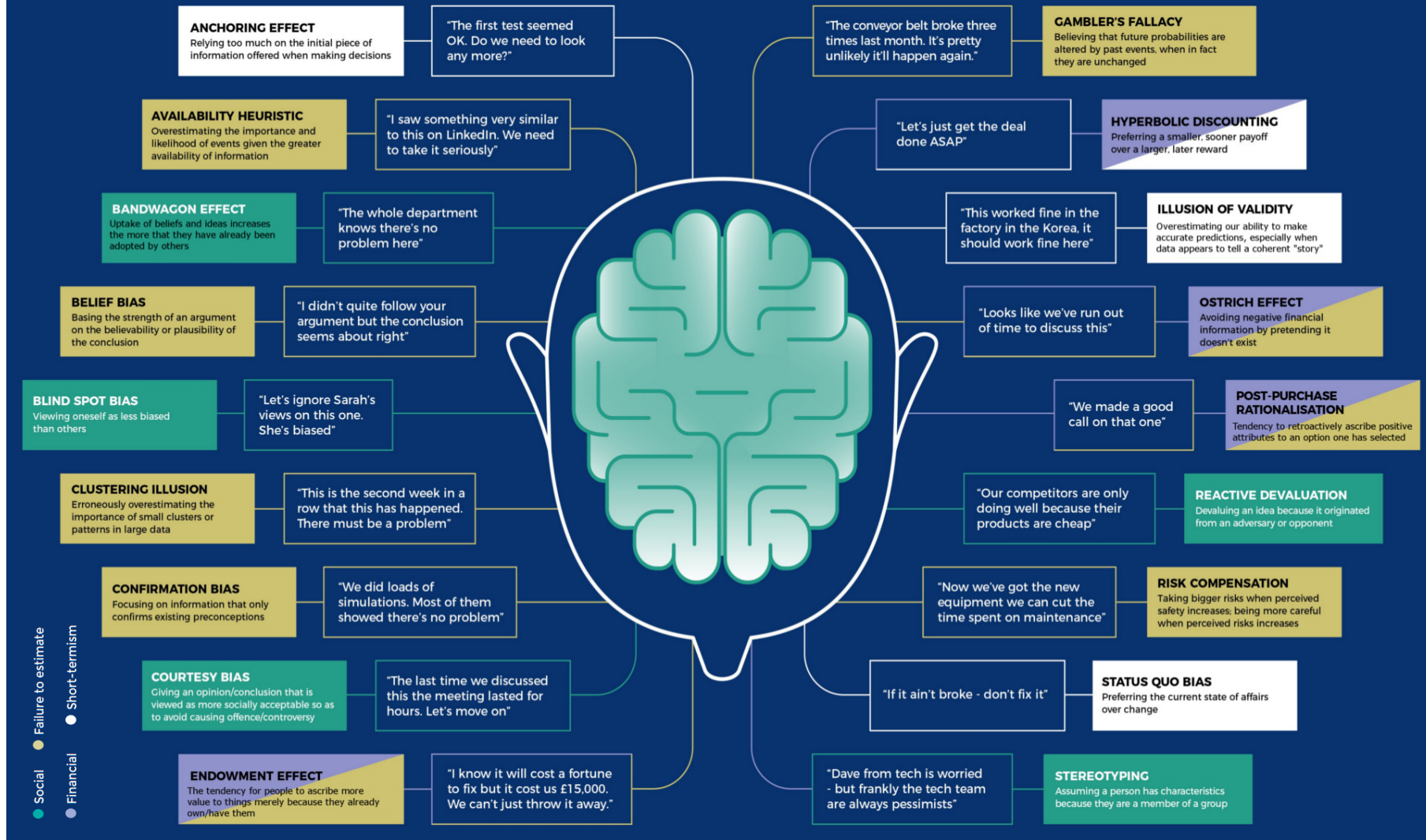


Creating a System 1 response in an emergency that is really a System 2 response

# Cognitive Bias



# Cognitive bias



Some of the most common

# COGNITIVE BIASES

**REGENCY/PRIMACY EFFECT** – people tend to remember best the information they hear first and last

**ZERO RISK BIAS** – people tend to favor reducing a small risk to zero over a greater reduction in a larger risk

**CONFIRMATION BIAS** – tendency to listen/give weight to only that information which supports our existing position/beliefs

**OSTRICH EFFECT** – tendency to avoid or ignore negative information

**AVAILABILITY HEURISTIC** – tendency to overestimate the importance of the information that is available to us

# Slippery Slopes



# The “Sorites Paradox”





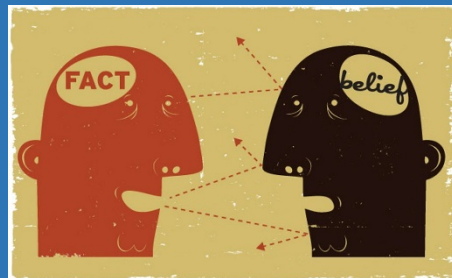
# The Boiling Frog



Big Little Lies – The  
“Ethical Slippery  
Slope”



# Cognitive Dissonance



**COGNITIVE DISSONANCE** is the mental discomfort experienced by a person who holds two or more contradictory beliefs, ideas, or values. This discomfort is triggered by a situation in which a person's belief clashes with new evidence perceived by the person.



# Conflicting Ideas are Uncomfortable

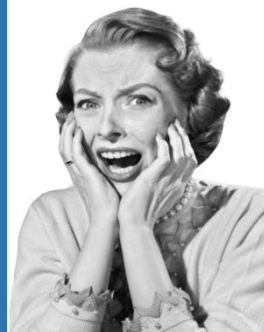
To relieve the discomfort, a person can:

- Change one of the factors/beliefs/behaviors
- Acquire new information
- Rationalize it

# How Does Cognitive Dissonance Impact Safety & Risk Management?



# Dread Factors





9NEWS.COM

1:45 65°

BREAKING NEWS

AIRCRAFT: NATIONAL GUARD  
JOINED IN RESCUE ATTEMPT



Common  
**Dread  
Factors**

Scale

Immediacy

Imaginability

Personal  
Control

Lack of  
Choice

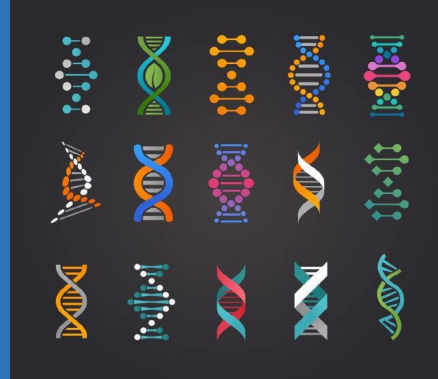
Unfairness

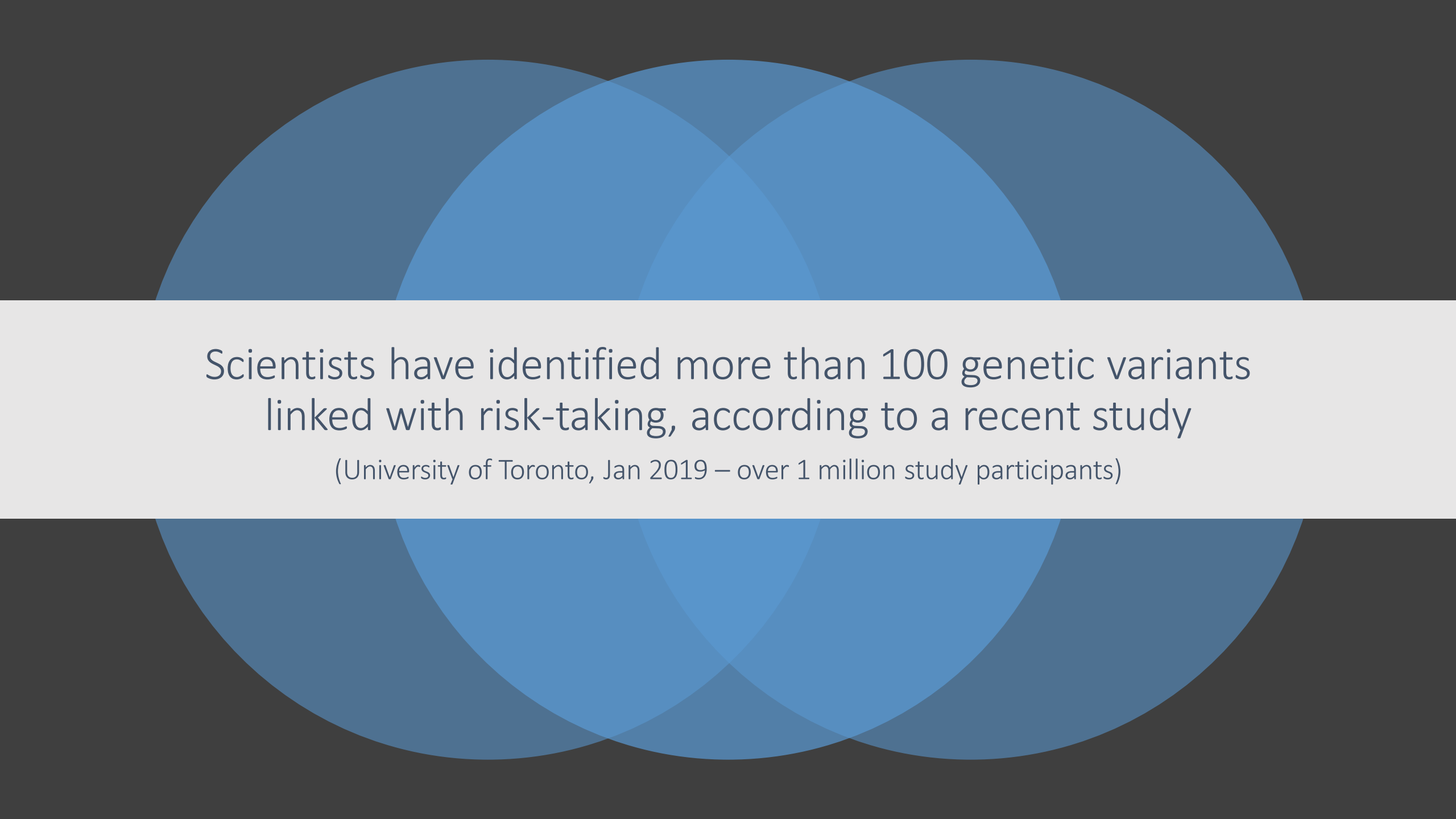
Children  
Involved

Lack of  
Familiarity

Media  
Coverage

# Genetic Predisposition



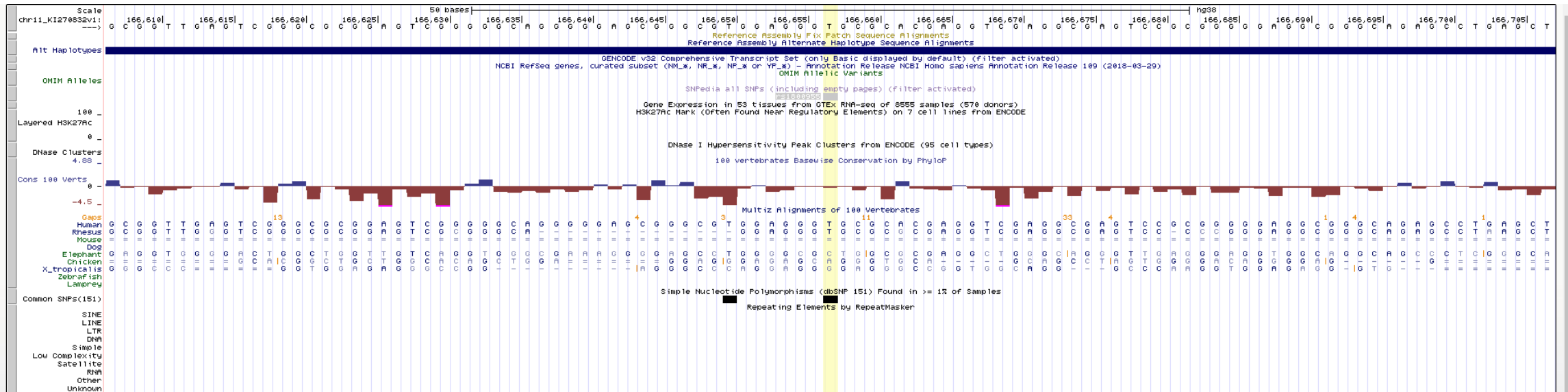


Scientists have identified more than 100 genetic variants  
linked with risk-taking, according to a recent study

(University of Toronto, Jan 2019 – over 1 million study participants)

# Example of a Genetic Factor Influencing Risk-Taking Behavior

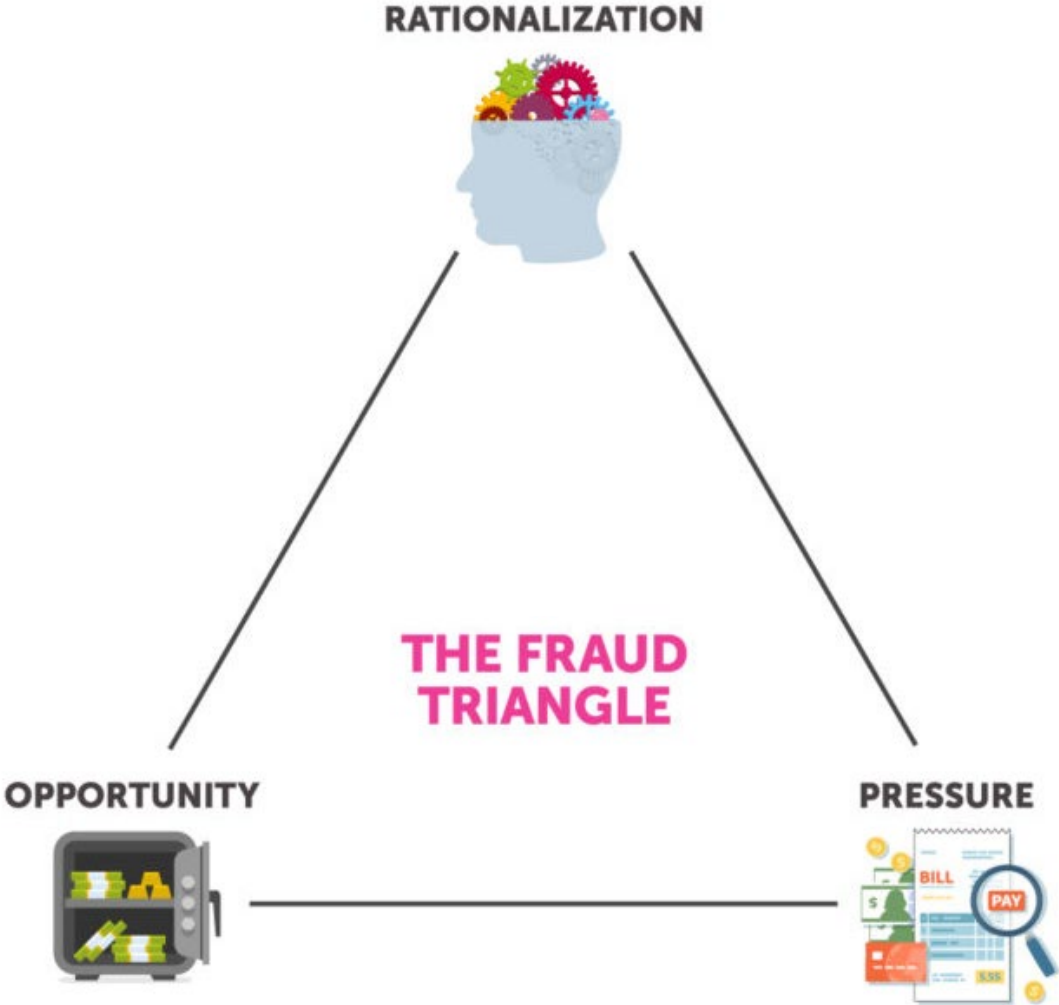
- DRD4 7R (7 repeat long)



# Fraud, Waste & Abuse (FWA)



# The Fraud Triangle



# TOOLBOX



# OVERCOMING COGNITIVE BIAS IN RISK EVALUATION

## The 4-Step “Pre-Mortem” Technique

Accept that a plan has failed or something bad has happened

Brainstorm to elicit all possible reasons for the failure

Discuss, evaluate and prioritize the list of potential reasons for failure

Look for ways to avoiding/mitigate potential/likely drivers of failure

The result is usually a more realistic assessment of risks and/or potential failure points in a plan or protocol



# Rain on the Parade !

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- Assign a devil's advocate/antagonist/dissenter
- Argue against/poke holes in your premise
- Take the opposite view and argue it





Use Values-Based Risk Management Instead of Rules-Based Risk Management

A man with glasses and a light-colored shirt is pointing at a whiteboard. The whiteboard has a diagram with three concentric circles. The innermost circle contains the word 'Why', the middle circle contains 'How', and the outermost circle contains 'What'. The man is holding a microphone in his left hand. The text 'Be a Story-Teller; Begin with the "Why"' is overlaid in white on the right side of the image.

Be a Story-Teller;  
Begin with the “Why”



Determine Decision  
Criteria Ahead of Time  
& Use “Tripwires”

Play the “Free  
Cash Flow Game”

or the

“What if We Were  
Just Starting Out  
Game”

or the

“What if this  
Option Wasn’t  
Available” Game




# Be Willing to Hear Bad News



Respond to Tremors;  
Don't Wait for the Big  
Earthquake





# The Silver Lining: Use A Negative Event for Positive Impact

(AKA “Never Let a Good Disaster Go to Waste”)

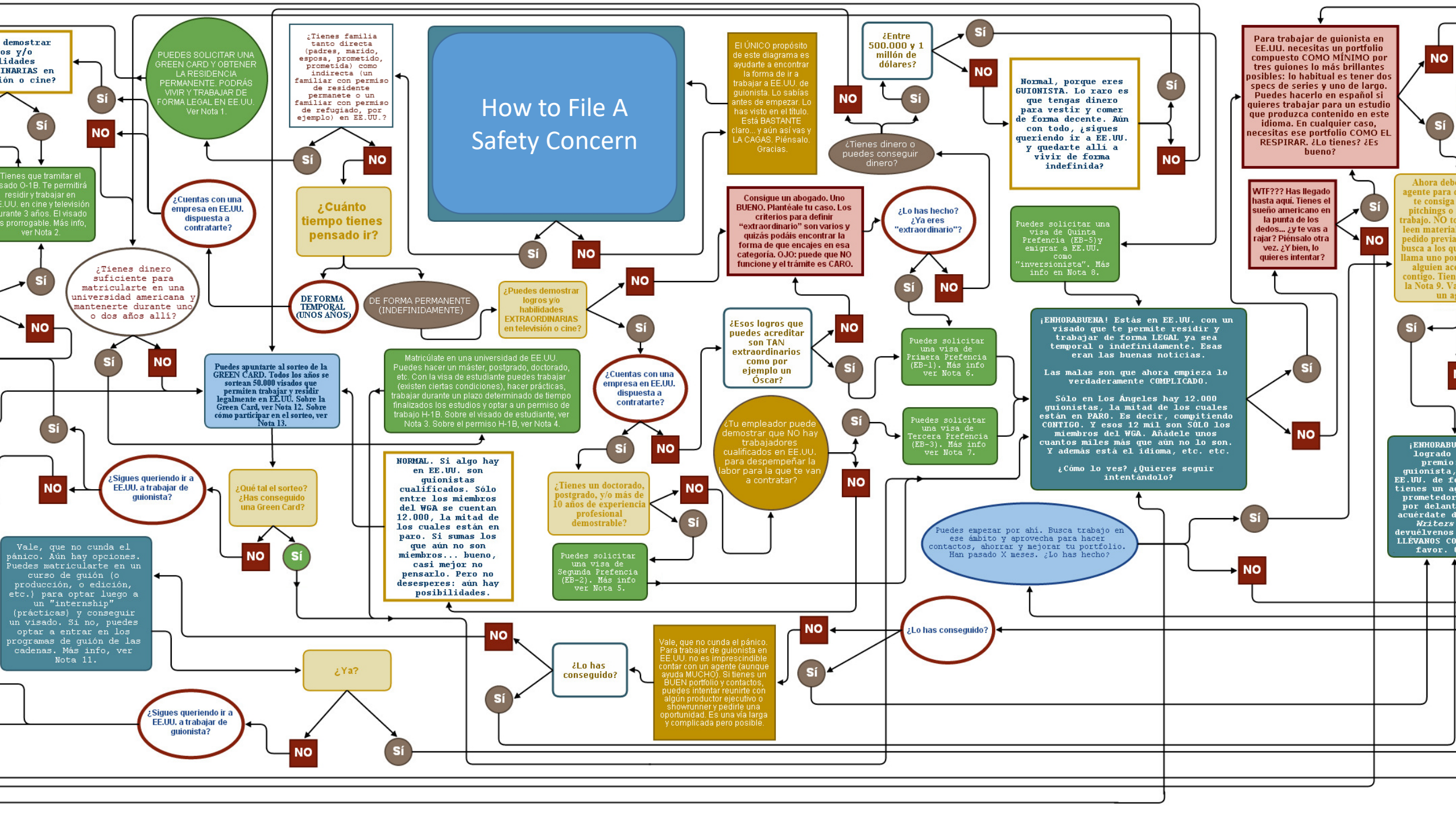




CREATE Cognitive  
Dissonance

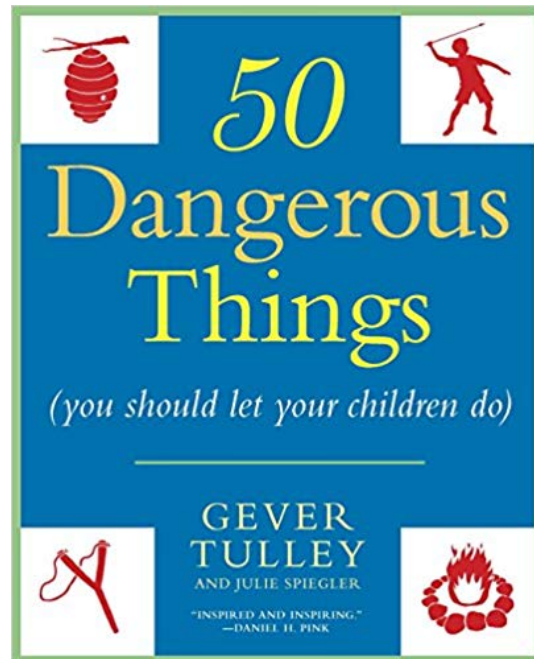
Simplify. Simplify. Simplify.

# How to File A Safety Concern



# The Ultimate Risk Paradox

*To be safer, take more risks!*



QUESTIONS  
&  
OPEN DISCUSSION

# Thank You

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