

People – The common denominator in Safety and why they are worth our efforts

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WHO AM I?

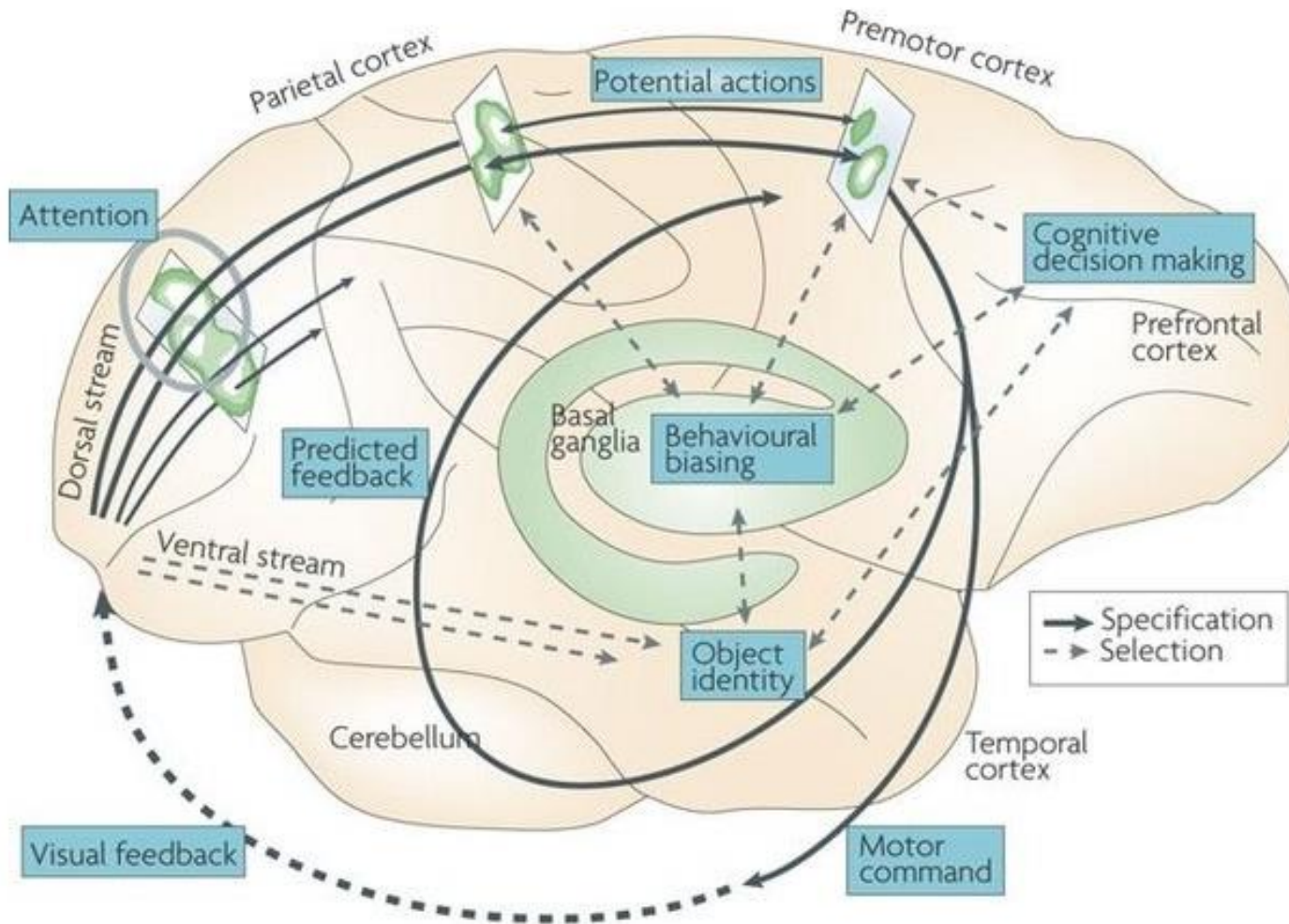
- *Born in Hamilton Ontario 1963*
- *Grew up on a farm* (tractors, augers, chainsaws, snowmobiles, dirt bikes, etc..)
- *BSc in Chemistry* (worked in chemical Industry for 24 years)
- *Married for 29+ years*
- *One daughter in University – GEO sciences*
- *Spare time is consumed with cottage life*
- *Passionate about Safety – 28+ years in safety*



Most of my
Safestart
stories come
from the
cottage

In our session today we will:

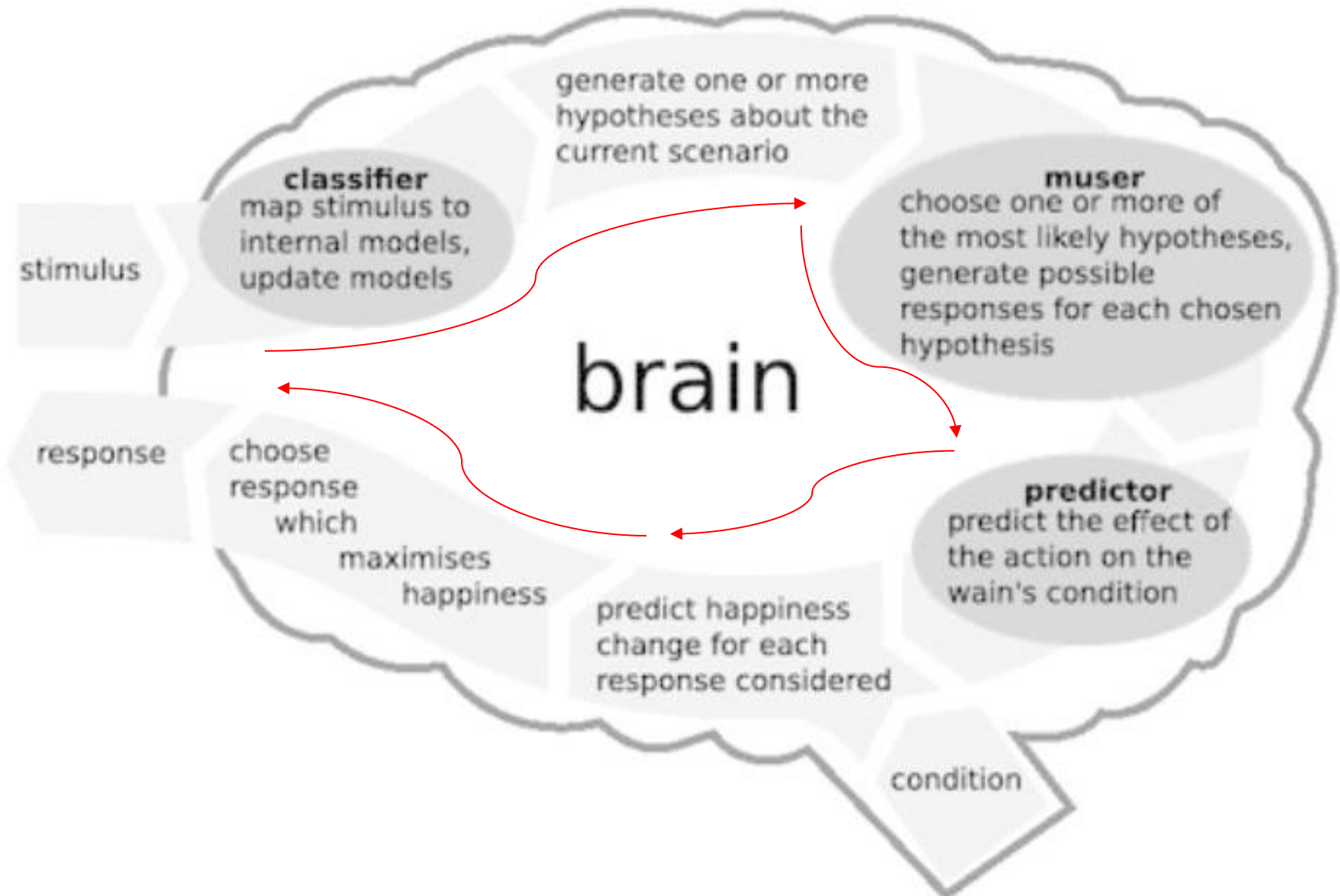
1. **HOW WE THINK** - Gain some insight into common thinking around errors and the repetitive nature of mistakes
2. **RISK TAKING BEHAVIOR** - Analyze the breakdown between risk taking and repeat offenders
3. **Learn core principles of human factors to overcome risk taking behaviors**



“the way in which an animal or person acts in response to a particular situation or stimulus.”

Oxford Dictionary

What is really going on?



Cognitive skills

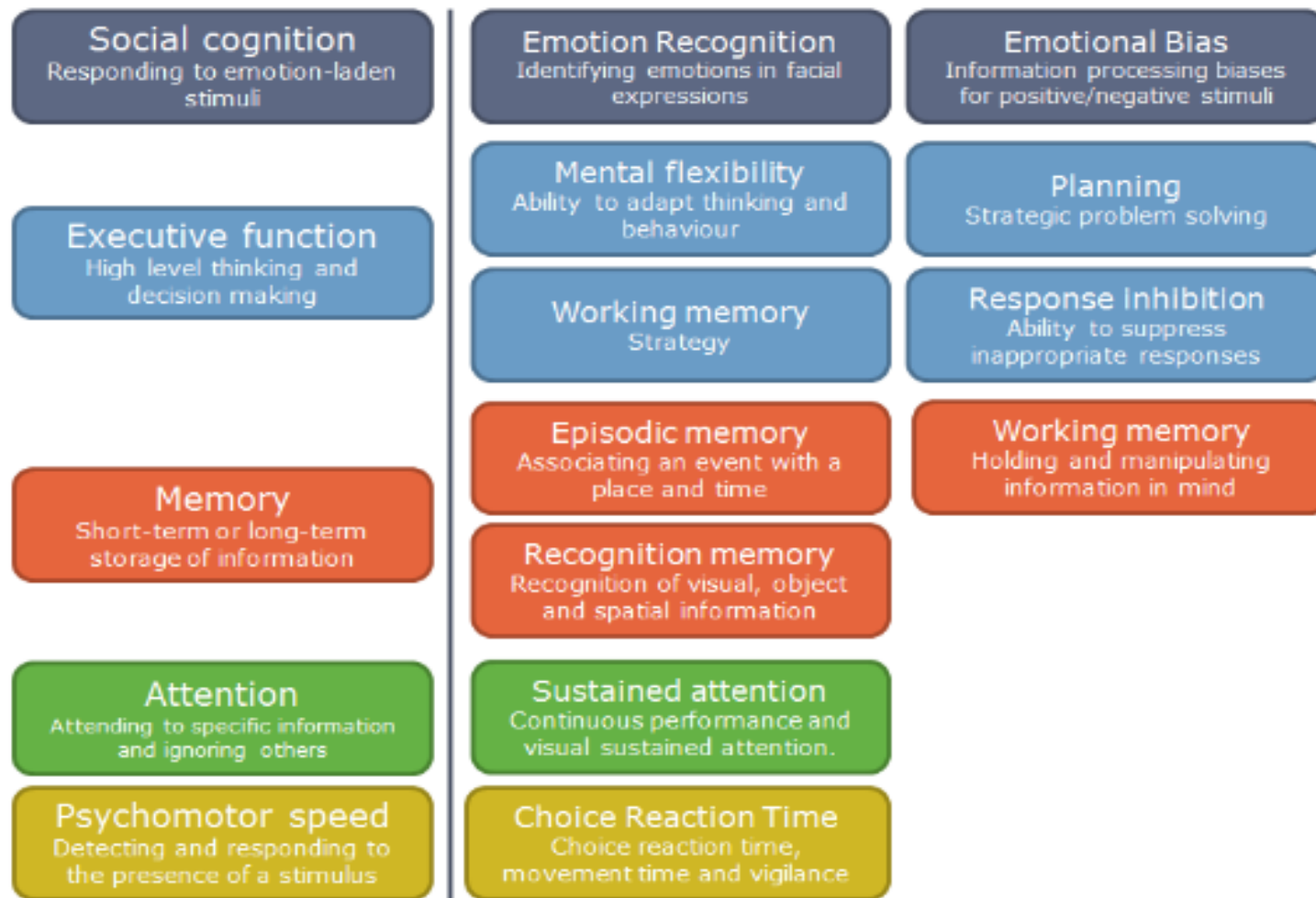


Figure 1. Domain specificity of cognition and examples of component cognitive processes underlying these mechanisms



In most organizations people want to do a good job and will do what you tell them!

Core principle #1 – Make sure **Communication** is clear, consistent and understood at all times

(Remove barriers that stop people from seeking clarification)

(Make it easy for people to follow instructions or verbal directions - KISS)

(Have them repeat back critical instructions)

Summary

1. We use our senses to assess our surroundings
2. We process an incredible amount of data (cognitive skills)
3. We store these skills which in turn create our response to specific stimuli (our behavior)
4. The way we respond is based on the “pathways” and “memories” which we have learned.
5. Challenging to remake pathways - retrain!?!#?
6. Behavior response is complex and varying

Now that we have armed ourselves with a small amount of understanding.....were ready for the next step.

Risk Taking Behaviors



Let's talk about human performance. But more accurately let's talk about human behavior that leads or directs people's action based on their decision making process.

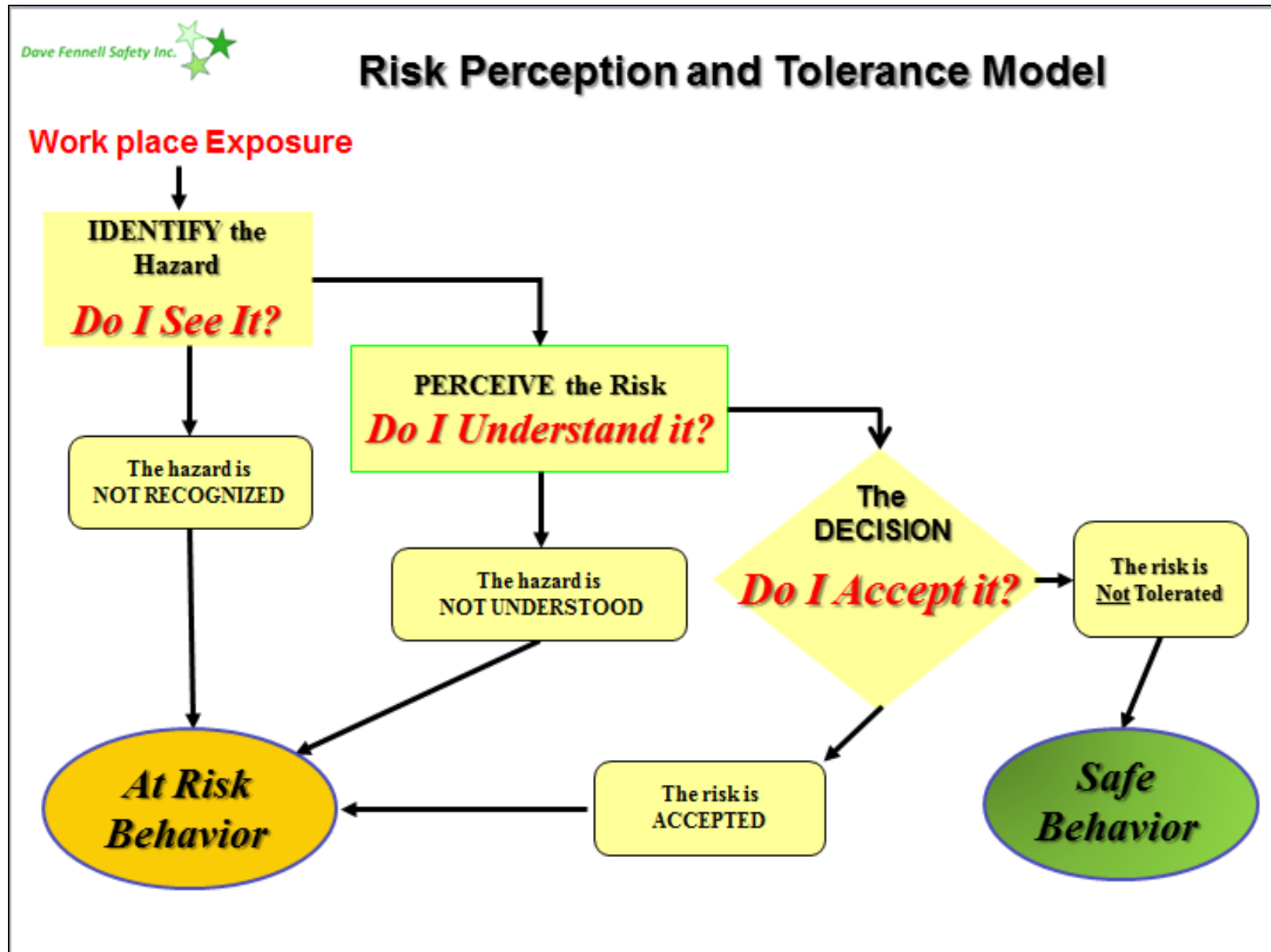


Because we can! Exercising their right to be stupid and reckless.



**What is so different about these pictures?
A different kind of recklessness?**

Only real difference is intent.





What is going on here?

10 factors that influence risk taking behavior

- | | |
|---|---|
| 1. Overestimating Capability/Experience | ↑ |
| 2. Familiarity with the Task | ↑ |
| 3. Seriousness of Outcome | ↓ |
| 4. Voluntary Actions and Being in Control | ↑ |
| 5. Personal Experience with an Outcome | ↓ |
| 6. Cost of Non-Compliance | ↓ |
| 7. Confidence in the Equipment | ↑ |
| 8. Confidence in Protection and Rescue | ↑ |
| 9. Potential Profit & Gain from Actions | ↑ |
| 10. Role Models Accepting Risk | ↑ |

10 factors that influence risk taking behavior

1. Overestimating Capability/Experience



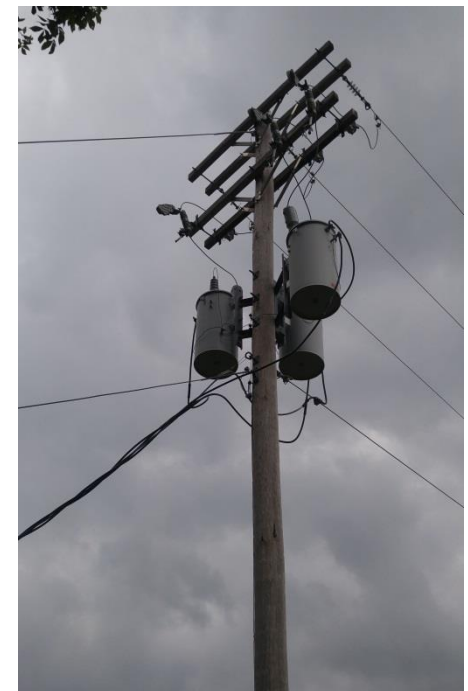
New driver

Strategies for reducing risk tolerance

- Reflect on your role as a mentor
- Acknowledge that the capability or skill may be sufficient and then reinforce the way it should be done

10 factors that influence risk taking behavior

2. Familiarity with the Task



Strategies for reducing risk tolerance

- ‘Situational Awareness’ – Every time like the first time **‘Take Two’**
- ‘What could go wrong **this** time?’
- ‘How would I teach a new person to do this?’

10 factors that influence risk taking behavior

3. Seriousness of Outcome



10 persons , dusk,
Alcohol???, no
running lights, life
vests?

Strategies for reducing risk tolerance

- **Take Two** “How bad could it be? Really ...How bad could it be?”

10 factors that influence risk taking behavior

4. Voluntary Actions and Being in Control



=



Strategies for reducing risk tolerance

- Integrate **'Take Two'** into your personal activities
- Set an example to those who may be watching

10 factors that influence risk taking behavior

5. Personal Experience with an Outcome



If you have seen a serious outcome, you will be less tolerant of the risk

Challenge: If we haven't seen it, we become **Sceptical**



	2015	2016	2017	2018
Accidents, total	1,932	(R) 1,724	(R) 1,772	(R) 1,870

 United States Department of Transportation

Strategies for reducing risk tolerance

- 'Expert observers', supervisors, 'keepers of the corporate memory' have the obligation to ensure workers know:
 - a) Incidents **have** occurred because of not following that standard
 - b) Demonstrate that there **have** been serious consequences

10 factors that influence risk taking behavior

6. Cost of Non-Compliance



Mick Crompton convinced friends working with him on a London skyscraper to recreate the famous 1930s image of steel workers on a lunch break.

But the 61-year-old, from Shirley, is now worried his picture could see his friends **lose their jobs** after being told they are facing disciplinary action.

Strategies for reducing risk tolerance

- Identify the cost of non compliance and increase it where necessary
- Remove barriers and increase reward for compliance

10 factors that influence risk taking behavior

7. Confidence in the Equipment



“Ladder is twice as stable, therefore ...”

- 1995 US Study – Drivers of vehicles with ABS and airbags have more accidents

- Parachuting – *Risk Homeostasis*

Strategies for reducing risk tolerance

- Training on limitations of the equipment and engineering
- Take Two What will happen **if** it does fail?

10 factors that influence risk taking behavior

8. Confidence in Protection and Rescue



Excellent PPE can result in over confidence in it's ability to protect



As long as I have my hard hat on I do not have to worry about walking under work zones?

Strategies for reducing risk tolerance

- Understand the **limitations of protection & rescue**
- See them as **'last lines of defence'**

10 factors that influence risk taking behavior

9. Potential Profit & Gain from Actions



**Turbine #2 lifts clear of its mounting
flooding the power station.
Disregarded vibrational inspections.**

Strategies for reducing risk tolerance

- Remove rewards for risk taking
- Eliminate barriers to doing it the 'right way'
- Examine contract language and incentive programs

10 factors that influence risk taking behavior

10. Role Models Accepting Risk



Peer pressure and group dynamics can be a powerful influence over marginalizing legitimate safety concern – Group think

www.crmlearning.com/groupthink-2nd-edition

Strategies for reducing risk tolerance

- Identify and address the risk takers (including yourself – where are you on the 'risk-taking' scale?)
- Recognize 'Erosion of Standards' and address immediately

Review - 10 factors that influence risk taking behavior

- | | |
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What is your Risk tolerance?

Core principle #2 – Set the **Risk tolerance**

(What are we as a company willing to accept – set the example)

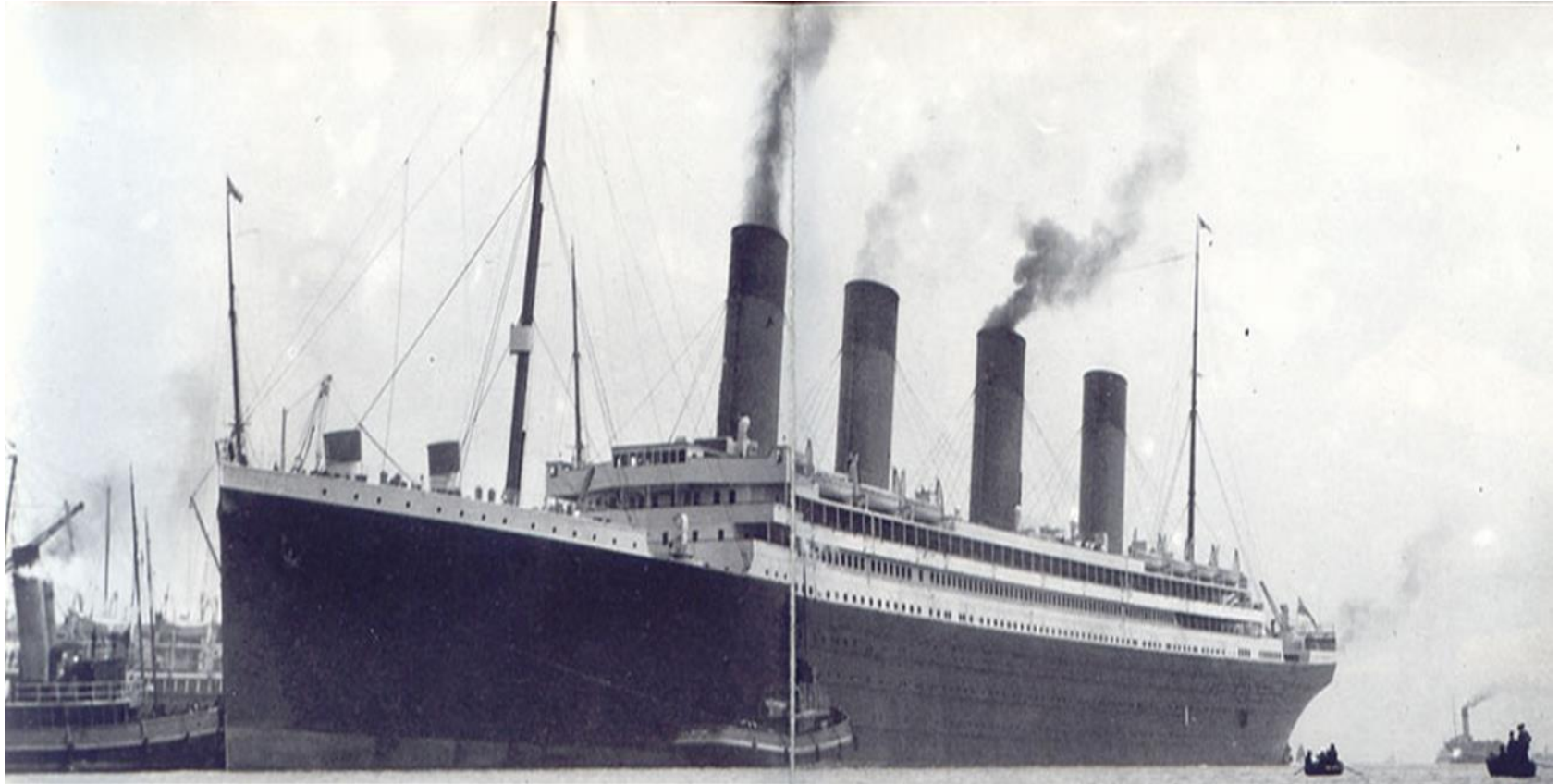
(Make positive learning examples from bad situations- look for the good!)

(How we act outside of work leaks and seeps into our work lives)

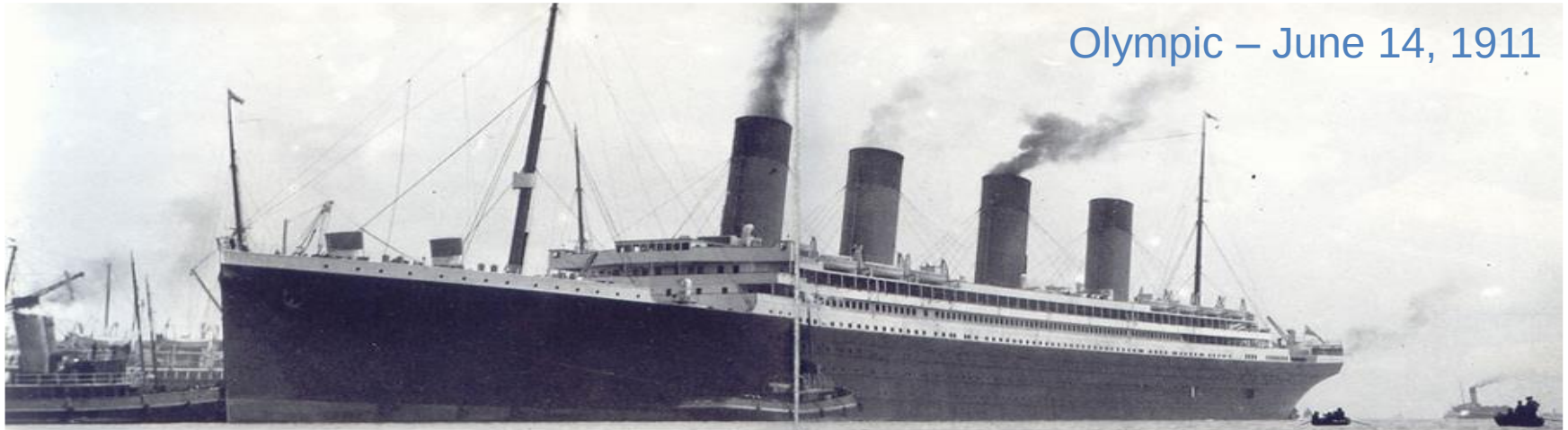
*Let us look at three Case Studies
and see if we can spot any trends*

‘CASE STUDY #1
Safety outweighing every other
consideration?’

Recognize this ship?



Two Sister Ships



Olympic – June 14, 1911

The sisters completed: the *Olympic* (top) with her open A deck promenade, and the *Titanic*, with enclosed A deck and irregularly spaced windows on B deck.



Titanic – April 10, 1912

The Olympic – Prelude to Disaster

Damage to the Olympic from the *HMAS Hawke* impact



- 21st Jun 1911
 - Upon commissioning crashed into & almost sunk tugboat O.L. Halenbeck in Manhattan
- 20th Sep 1911
 - Crashed into the Naval Cruiser the HMS Hawke in Southampton
- 24th Feb 1912
 - Knocked off one of its twenty-six ton propellers on a well-known wreck in the Grand Banks

Who was the Captain?

Captain Edward J. Smith



- 1889 – Ran the Republic aground in NY
- 1890 – Ran the Coptic aground in Rio de Janeiro
- 1909 – Ran the Adriatic aground outside NY
- History of running ships too fast through narrow passages and not training his officers

Titanic – Tragic Circumstances

- 14th April 1912

- Smith received at least six warnings of ice fields from ships at dead stop in the area
- No binoculars in the crow's nest meant that early warning was near impossible
- Titanic sped toward ice field at 22.5 knots vs. a recommended 10 knots in such conditions

- Motivations for this speed

- Desire to break the transatlantic speed record as encouraged by J. Bruce Ismay MD of White Star who was on board for the maiden voyage

- Safety Response Capability

- Lifeboats on the ship had been reduced from sixty-four boats to twenty-two in lieu of more expansive promenades
- The officers on board The Titanic had not been trained with the lifeboats and were unsure of their holding capacity
- There was no standing safety response plan. the 'Women and Children first' response was a reaction more than a previously-agreed plan

Lives Lost: 1,500 Total Passengers: 2,205 Max Lifeboat Capacity: 1,600

Why could we not recognize the trend?
Why did no one intervene or take action?

**‘Safety outweighing every other
consideration?’**

*This notice was framed in the
chart room of every White Star liner in 1912*

Core principle #3 – Good **Leadership** is critical

(Accountability and responsibility for everyone's safety is paramount – starts with leadership)

(Be a coach not a critic....say at least one positive thing a day to someone)

(1st and 2nd strikes only apply in baseball....that's a game...safety is no game)

‘CASE STUDY #2
The Devastating Impact of
Failed Core Values’

The core values of Leadership explored

- The Crash of a Czar 52, a B-52 at Fairchild AFB on 24 June 1994
- Darker Shades of Blue: A Case Study of Failed Leadership By Maj Tony Kern
- The players;
 - Lt. Col “Bud” Holland (AC) ,
 - Lt. Col Mark McGeehan (CP) &
 - Wing Staff

“Bud” Holland’s Flight History

Wing leadership comments:

“As good a I’ve seen” “The best pilot I know”

View of Jr. Officers:

“I’m not flying with him” “He broke regulations every time he flew”

May 91 Fairchild Air Show – Exceeded pitch & roll limits in violation of FAA req.

July 91 Squadron CoC – Passes as low as 100 -200 ft. Wing over in violation of sideslip limits. Senior staff watched but did nothing but debrief Holland

May 92 Fairchild Air Show – Excessive pitch bank and wingover – verbal reprimand

April 93 Global Power Mission – Flew close visual formation – sent copilot back

Aug 93 Fairchild Air Show – Excessive pitch bank and wingover – no action taken

Mar 94 on the Bomb Range – Less than 30 ft clearance CP pulled back – verbal reprimand. Lt. Col. McGeehan made to decision to restrict his crews from flying with Holland unless he was on aircraft.

- Killed during the crash of Czar 52
 - Lt. Col “Bud” Holland (AC)
 - Chief of Wing Stan Eval
 - Mr. Air Show
 - Many documented flagrant violations of flight discipline
 - Lt. Col Mark McGeehan (CP)
 - Bomb Squadron CC
 - Attempted, but unable to ground Holland for his many violations
 - Flew with Holland so others from his squadron would not have to
 - Attempted ejection
 - Col Robert Wolff (Safety Obs)
 - “Final-flight” His family watched, ready with champagne to toast the end of a great flying career
 - Lt. Col Ken Huston (RN)



Core principle #4 – Everyone is **Accountable** for the safety culture

(Everyone shares a stake in the game – we are as strong as our weakest link)

(Do not overlook opportunities to strengthen culture – step up!)

(Learn to look for them and if identified take action)

‘CASE STUDY #3

‘It can happen to the best of us’



Rushing X 2

Mind not on Task

Frustration X #&\$% 4

Complacency



+



Eyes not on Task

Line-of-Fire

Balance traction Grip

Formula to explain:

Wet roof x [Rushing² + Frustration⁴]

Complacency x 5 foot fall

= NO FISHING + 2 cracked ribs



Core principle #5 – Be **Empowered** to take charge of safety for ourselves and others

(Even safety professionals make mistakes – Most not reported)

(Empower others and take personal accountability for your safety and that of others)

(Mechanism for recognizing and influencing risk taking decision process – SAFESTART)

Summary of core principles

Core principle #1 – Make sure **Communication** is clear, consistent and understood

Core principle #2 – Set the **Risk tolerance**

Core principle #3 – Good **Leadership** is critical

Core principle #4 – Everyone is **Accountable** for safety

Core principle #5 – Be **Empowered** to take charge of safety for ourselves and others