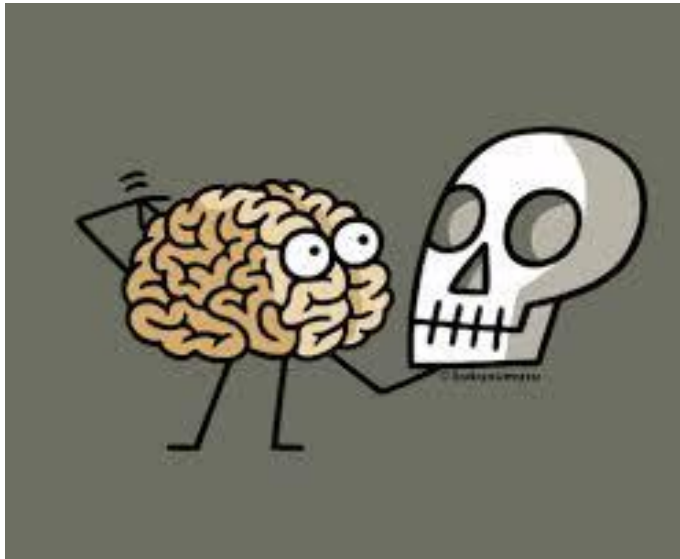


The Neuroscience of Morality and its Effect on Psycho-social Safety

Jo Hamilton

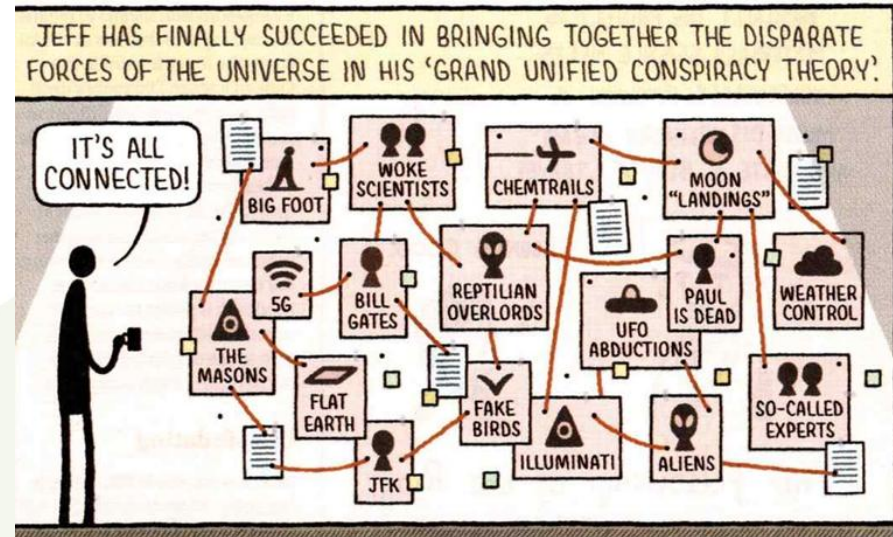
16th September 2025



HumanFactors[SA]
A U S T R A L I A

Goals – Learning Outcomes

- To gain an understanding of the neuroscience of morality
- To consider how differences in moral reasoning may impact psycho-social safety



Outline

- Neuroscience and safety
- Neuromorality
- Moral reasoning and Moral Foundations Theory
- Psychosocial safety and moral reasoning
- Responsibility - organisational and individual



Neuroscience and Safety

- Involves neuroscience, safety science, psychology and behavioral science.
- Focuses on the cognitive processes such as attention, feeling and memory of danger; relationship with behavioral decision-making and development
- Describe, explain, predict, guide and control human psychology



Moral Reasoning

- A decision, judgement or process of reasoning being made within a moral domain
- Involves the judgement of the actions of the self or another person, active or passive judgements, and personal or impersonal assessments (Garrigan et al., 2016).



Neuromorality

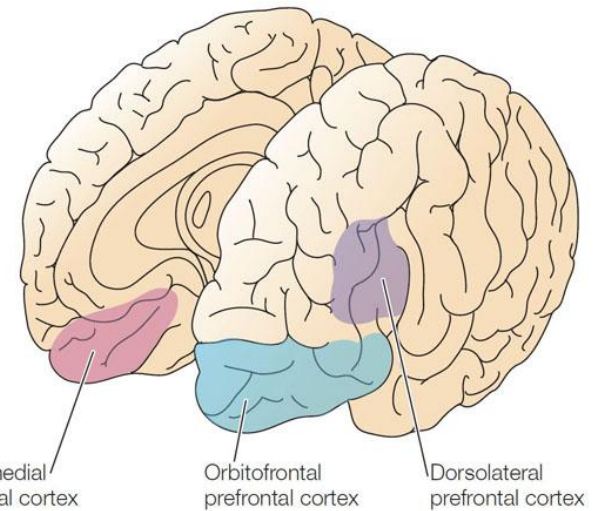
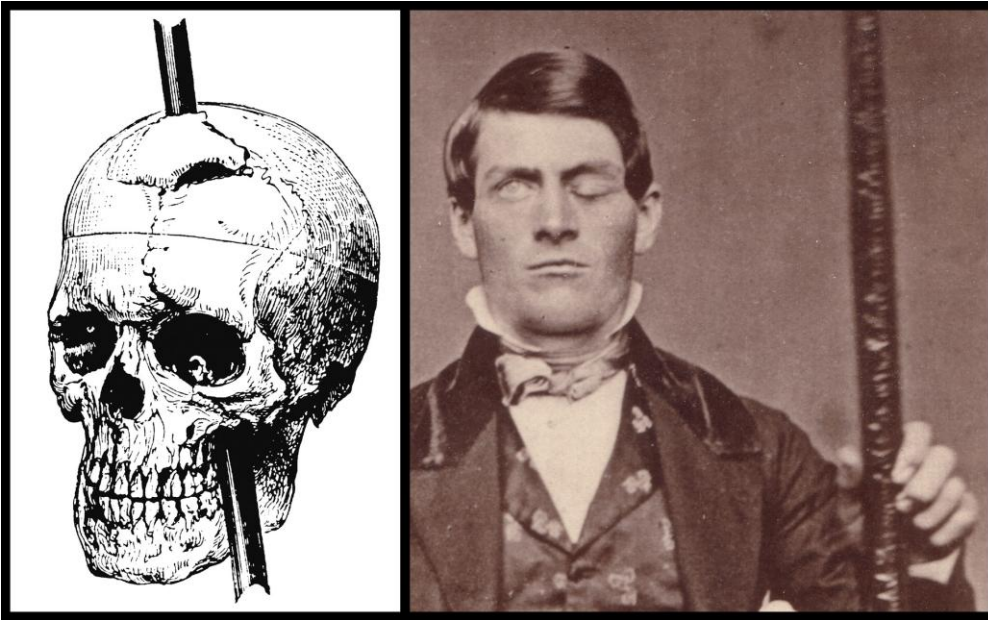
- Neurocorrelates of morality influenced by differences in empathy, caring and justice sensitivity
- Moral compass used to navigate life
- Implications:
 - Legal settings
 - Safety
 - Interpersonal relationships

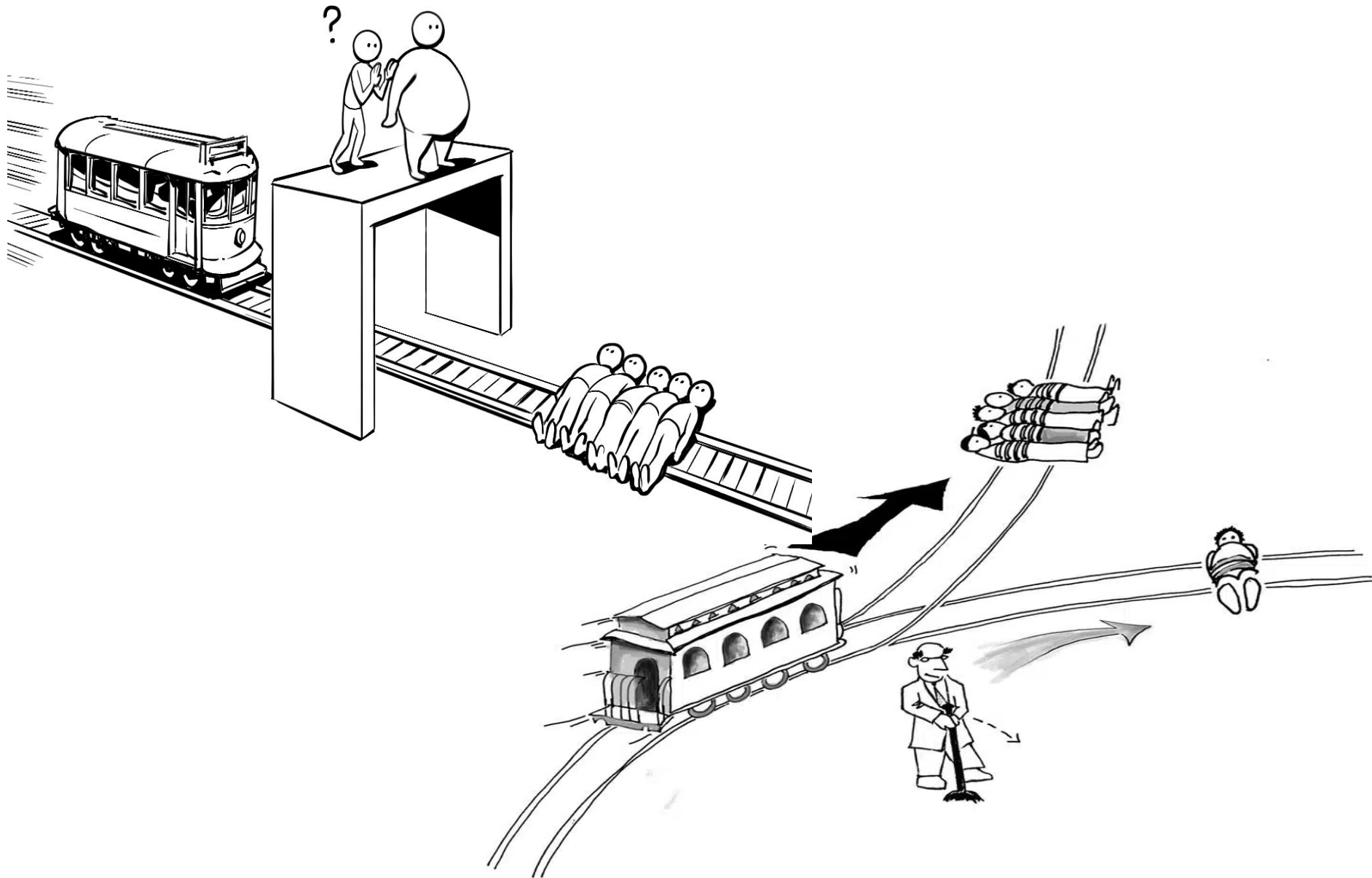


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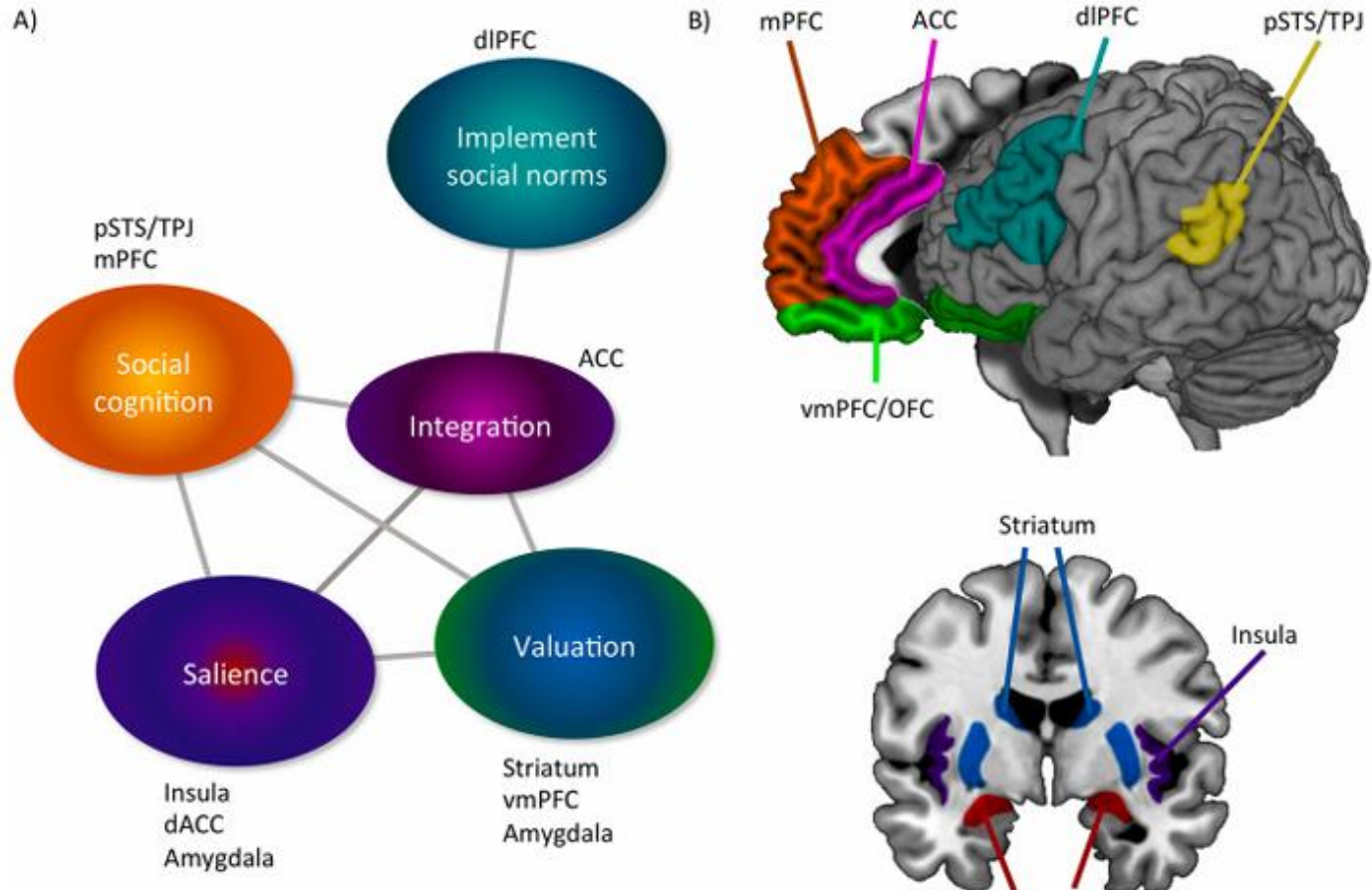
"When faced with a tricky ethical issue, I always ask the question, 'What's in it for me?'"

Phineus Gage 1848 (1823-1860)





Social / Moral Brain



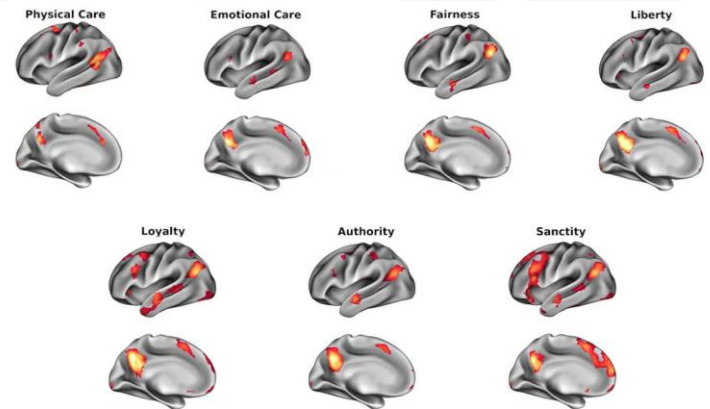
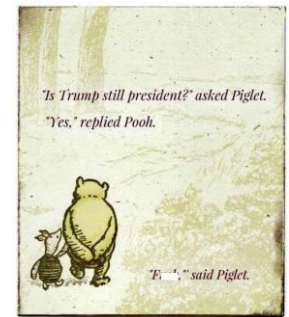
The Moral Brain

Moral Foundations Theory – Haidt (2012)

Questionnaire online [Moral Foundations](#)

Test

- *Care/harm*: cherishing, protecting others
- *Fairness/cheating*: rendering justice according to shared rules;
- *Loyalty/betrayal*: standing with your group, family, nation
- *Liberty/oppression*: proportionality
- *Authority/subversion*: submitting to tradition and legitimate authority
- *Sanctity/degradation*: abhorrence for disgusting things, foods, actions



How much would someone have to pay you to perform each of these actions? Assume that you'd be paid secretly and that there would be no social, legal, or other harmful consequences to you afterward. Answer by writing a number from 0 to 4 after each action, where:

0 = \$0, I'd do it for free

1 = \$100

2 = \$10,000

3 = \$1,000,000

4 = I would not do this for any amount of money

Column A

- 1a. Stick a sterile hypodermic needle into your arm. _____
- 2a. Accept a plasma-screen television that a friend of yours wants to give you. You know that the friend got the TV a year ago when the company that made it sent it to your friend, by mistake and at no charge. _____
- 3a. Say something critical about your nation (which you believe to be true) while calling in, anonymously, to a talk-radio show in your nation. _____
- 4a. Slap a male friend in the face (with his permission) as part of a comedy skit. _____
- 5a. Attend a short avant-garde play in which the actors act like fools for thirty minutes, including failing to solve simple problems and falling down repeatedly onstage. _____

Column B

- 1b. Stick a sterile hypodermic needle into the arm of a child you don't know. _____
- 2b. Accept a plasma-screen television that a friend of yours wants to give you. You know that your friend bought the TV a year ago from a thief who had stolen it from a wealthy family. _____
- 3b. Say something critical about your nation (which you believe to be true) while calling in, anonymously, to a talk-radio show in a foreign nation. _____
- 4b. Slap your father in the face (with his permission) as part of a comedy skit. _____
- 5b. Attend a short avant-garde play in which the actors act like animals for 30 minutes, including crawling around naked and grunting like chimpanzees. _____

Total for Column A: _____

Total for Column B: _____

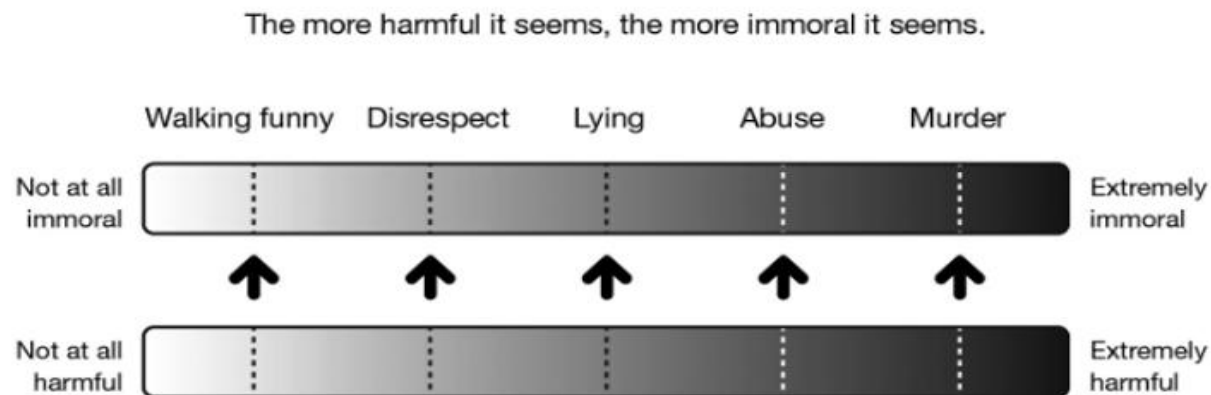
MFT versus Harm Based Theory Gray (2025)

Differ across cultures

Harm based theory – evolved as a prey species

More about intuitive feelings than deliberate reasoning

Harm is a continuum



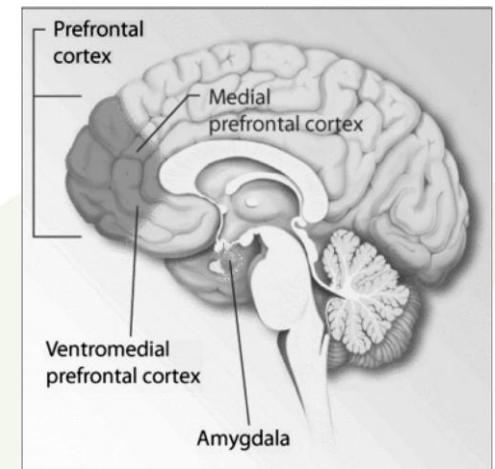
Psychosocial Safety

- Conditions that can harm mental wellness
- Examples: Bullying, harassment, exposure to traumatic events
- Considered on par with physical hazards



Psychosocial Safety and the Brain

- Psychological safety is intertwined with our neurological responses
- Understanding neurological mechanisms can empower leaders to create environments that foster innovation, collaboration, and well-being
 - Oxytocin enhances trust and collaboration
 - The prefrontal cortex shuts down when under threat
 - Dopamine rewards goal directed behaviour
 - Neuroplasticity enhances learning and adaptation
 - Chronic stress damages cognitive functioning



Morality and Safety

- In exceptional cases some people may disengage from a part of the set of norms and engage in immoral conduct.
- Affects own work and others
- Compromises safety performance

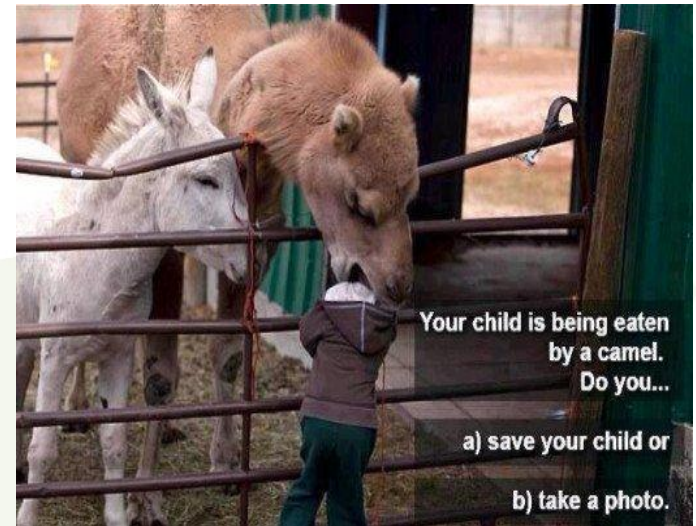


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"To succeed around here you must leave fear at the door. And your moral compass as well."

The Cost of Bad Behaviour

- Poll of 800 employees, 25% reported witnessing workplace rudeness daily
- Study - groups who experienced aggression performed significantly worse on cognitive tasks than the control group.
- Being the victim of rude or aggressive communication impairs cognitive performance.
- Witnessing rudeness/ aggression Causes negative emotions/ distraction, Impairs cognition, impairs task performance



Moral Injury - Definition

When a person is morally injured, they don't view the world as unsafe, but as morally unreliable.

Morality is, amongst other things, a way in which we understand the world and our relationship with it



Moral Injury – Contributing Factors

A moral injury may arise from a variety of situations including perpetrating, failing to prevent, bearing witness, experiencing or learning about acts that transgress one's beliefs and expectations.

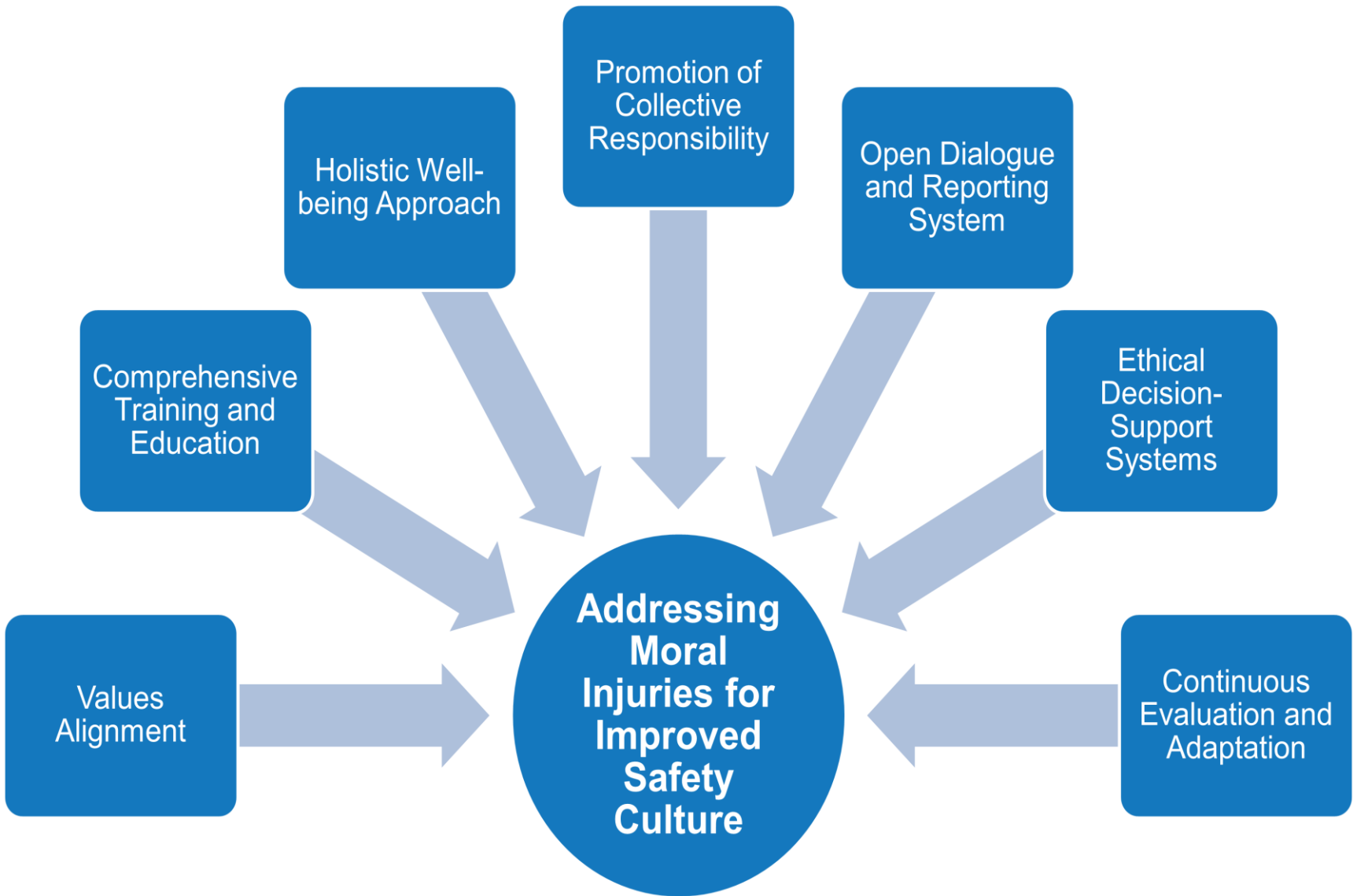
Moral Injury and PTSD

- Transgression is not necessary for PTSD
- PTSD diagnosis does not sufficiently capture moral injury (shame, self-handicapping, guilt, etc.).
- PTSD is a mental disorder that requires a diagnosis.
- Moral injury is a dimensional problem - there is no threshold for the presence of moral injury,



Moral Injury and PTSD

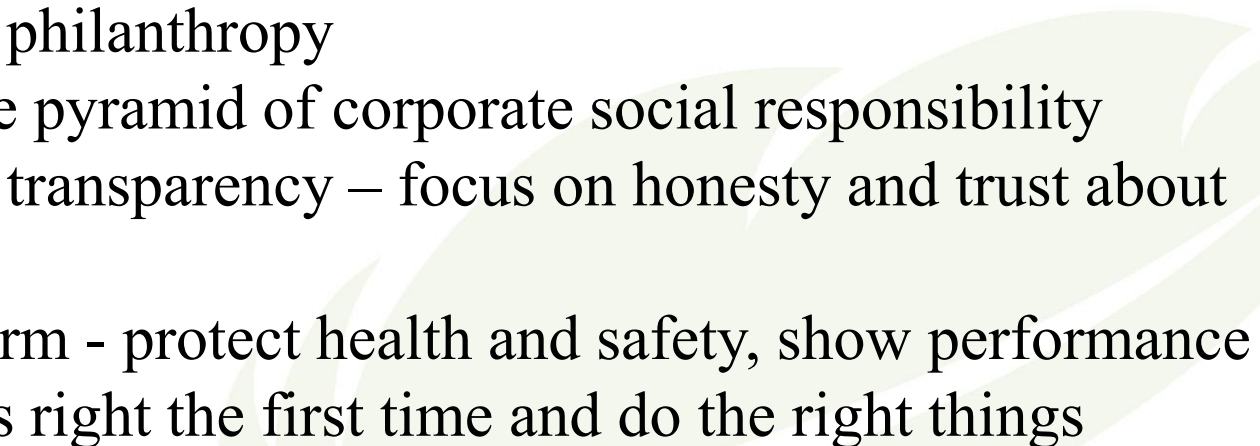




Moral Injury

Moral injury destroys the meaning of life because life is fundamentally moral, as are most of the stories we tell each other. The narratives of human life are moral narratives not in the sense of admonitions to be morally good, but because we all live in a moral universe, that is a universe of meaning. In a moral universe there is a connection between what people say and what people do. It is not hopelessly naive to believe that “there are people in charge who know and care, even if they sometimes make mistakes,” or “the people who love me would not deliberately hurt me.”

Morality and Safety

- Ethical Management Policy - Include ethics in the company safety policy.
 - Ensure full commitment to safety and to ethical principles throughout the organisation
 - Embrace philanthropy
 - Adopt the pyramid of corporate social responsibility
 - Embrace transparency – focus on honesty and trust about risks
 - Do no harm - protect health and safety, show performance
 - Do things right the first time and do the right things
- 

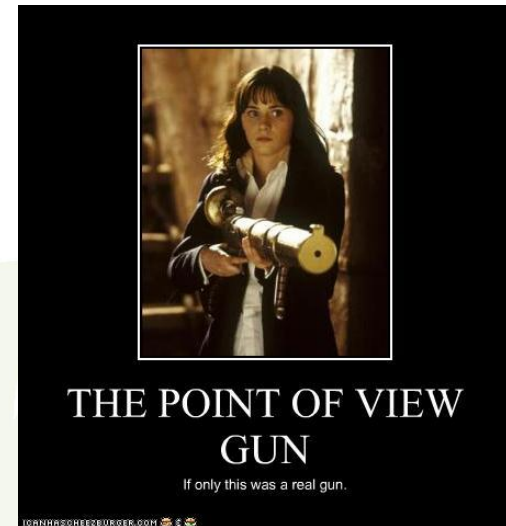
High Reliability Organisations and Just Culture

- Ability to operate safely and effectively despite inherent risks
- Preoccupation with failure
- Reluctance to simplify
- Sensitivity to operations
- Commitment to resilience
- Deference to expertise

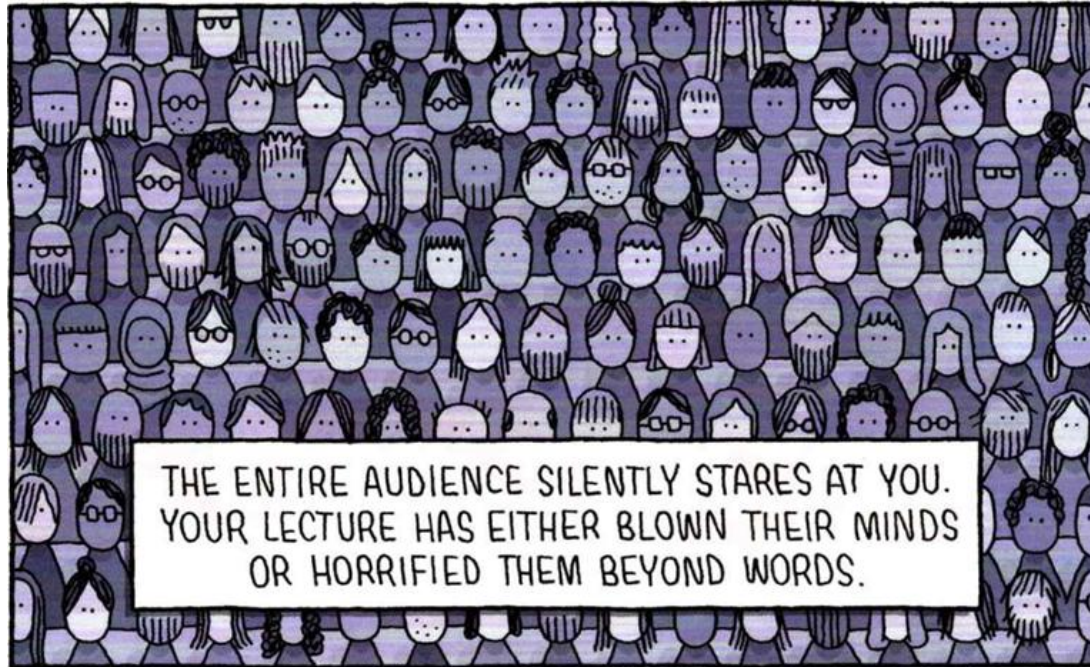


A Premise

**Other people's
behaviour makes
sense to them.
I can only control
myself**



Questions / Thoughts



Contact:

jmh11@iprimus.com.au

0419 849 017

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