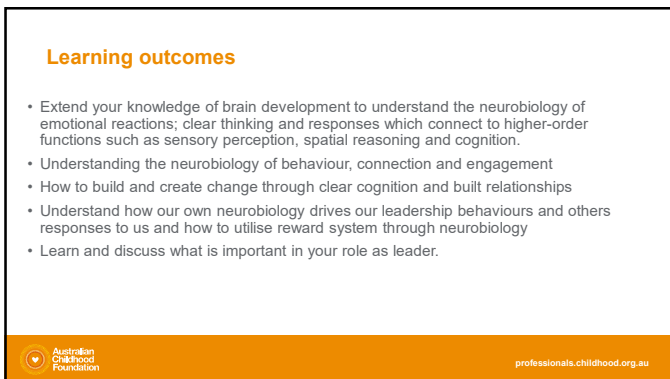



1



2



3



Learning together online


- Participation is always welcome
- Cameras on, unless you need to take a break
- Mute yourself when not talking
- Hands up or use the chat button if you have questions
- Please use headphones if children are in your training space
- Please maintain confidentiality

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4

Neuroscience and leadership

“When you understand neuroscience as your core leadership foundation, you can continue to come back to that, as a way of connecting everything together.”




David Rock CEO Neuroleadership Institute

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5

Positive Leader Role

- Leaders set the tone for their organisation or team, and their behaviour determines whether interactions are characterised by positive or negative emotions.
- The bosses' mood has an even greater impact. The Hay Group has shown that up to 70% of the climate in a team is determined by the leader.
- A leader who is aware of their emotional impact and displays a positive rather than a negative mood significantly enhances teamwork, coordination and effort.
- At its heart leadership is about someone stepping up to drive change, in order to produce satisfying outcomes.



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Activity

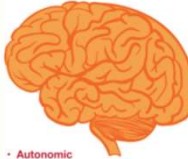


Discuss who are great leaders?
What are the traits of your current leaders?
Who would you walk over coals for?

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The ACF Inc. Model



- Increase reward
- Higher cognitive function
- Meet social needs
- Planning
- Connection

Increase cortical brain functioning

- Autonomic
- Certainty and change
- Followership
- Integration
- Neuroception
- Connectedness

Manage lower brain responses


- Reduce threat
- Co regulate
- Build connection
- Self & co-regulation

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The Human Brain




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QUESTIONS

Create your own brain and:
 1. List the things you already know about neurobiology of leadership
 2. What is one question you want answered today



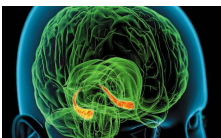
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10

Brain Architecture

Ingredients for building brain architecture are:

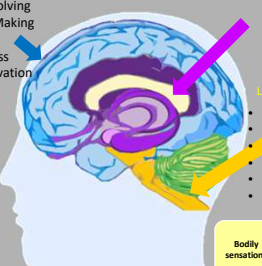
1. The genes we inherit
2. Experience and environment
3. Interpersonal, social experiences



Being an effective leader means understanding people. Understanding people means understanding the biology of the human brain including yours.

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Frontal Cortex

- Cognition
- Reason
- Planning
- Problem Solving
- Meaning Making
- Narrative
- Mindfulness
- Self Observation

Emotion

Limbic System

- Feelings and affect
- Survival emotions

Lower Brain

- Hunger
- Temperature control
- Heart beat
- Sucking
- Instinctive responses
- Processing of the body

Cognition

Bodily sensations


Movement

5 Senses

12

Brainstem - basic life functions

- Basic life functions
- First part of our brain to develop
- This is the most developed brain part at birth
- Responsible for our heart beat, breathing, sucking, temperature control, blood pressure




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Cerebellum- movement and balance

- Helps us to know where our body is in space
- Helps us with our posture and balance
- Helps us not to fall over and to control our movements
- Has its own connective pathways between the 2 halves- cerebellar vermis




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Limbic lobe- emotional gateway

- The part of the brain that helps us attach an emotion to an experience or memory
- This part of the brain is particularly involved with the emotions of fear and anger
- Also heavily involved in attachment processes
- This area develops mainly after birth

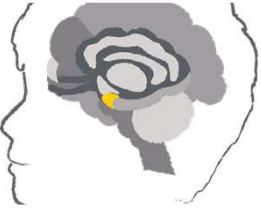


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Amygdala & Hippocampus

- **Amygdala**
 - the 'smoke detector' of the brain
 - is mature at birth
 - processes & stores implicit memories
- **Hippocampus**
 - matures between 2-3yrs of age
 - provides context to memories & embeds into long-term memory

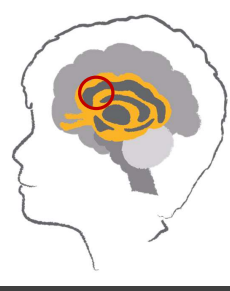


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Anterior Cingulate Gyrus (ACC)

- Emotional processing and vocalization of emotions.
- Emotional bonding and attachment
- Connects with the amygdala – related to emotions and fear conditioning
- "Joy releases opioids in rACC which triggers top down inhibitions of the defence system" (Dan Hughes)




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Cerebral cortex-complex thinking

- The largest part of the brain
- Associated with higher brain function such as thought and action
- Examples of functions:
 - Reasoning
 - Logic
 - Judgement
 - Voluntary movement




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The prefrontal cortex- executive function

- Responsible for executive functions, such as judgement, reasoning, and self awareness.
- Final part of the brain to reach maturity in one's late 20s for women and early 30s for men.

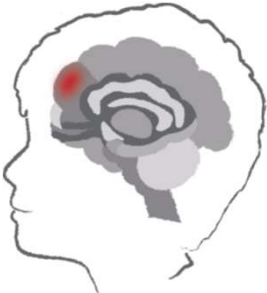


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Medial prefrontal cortex

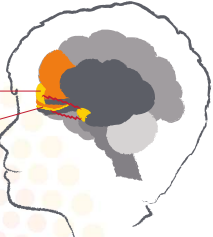
- Self referential reflection
- Is a ventral area that is linked to self awareness
- Associated with perceptions of self and similar others
- Known as centre for mindfulness
- Involved in relationship bonding – the one to another dyad and inter-subjectivity



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Mindfulness and co-regulation




Pre-Frontal Cortex
(the centre of Mindfulness/ Self awareness)

Right Orbitofrontal Cortex
(Regulation of Arousal)

- Mindful awareness/ meditation de-activates the amygdala
- Quality co-regulation de-activates the amygdala

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Leadership –Limbic lobe

The firing of the limbic system seems to occur within 8 milliseconds of a primary cognition *and* it takes almost 40 milliseconds for that same circuit to appear in the neocortex for interpretation and conceptualisation (LeDoux, 2002).

With this timing, our emotions are determining cognitive interpretation more than previously admitted.

Once primary cognitions have occurred, secondary cognitions allow for the neocortical events (i.e., reframing) to drive subsequent limbic or emotional labelling.

Our unconscious emotional states are arousing emotions in those with whom we interact before we or they know it. And it spreads from these interactions to others.

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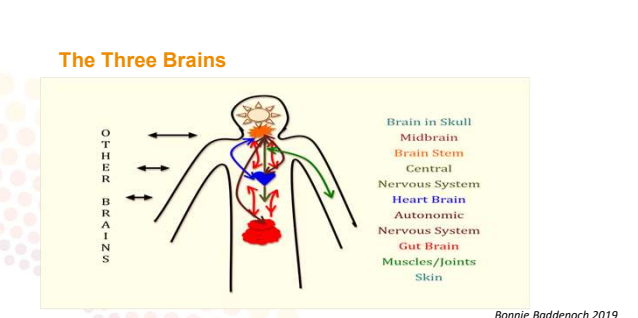
Three brains in leadership

Recent neuroscience findings have uncovered that we have complex and functional neural networks-or 'brains'- in our heart and gut, giving scientific credence to the growing body of leadership literature showing how the world's best companies are guided by leaders who can tap into the intelligence of their head, heart and guts.

Truly generative and adaptive leadership today requires whole new levels of self-awareness and self-facilitation for integrating head-based intellect with heart-based values and gut-based instincts. No longer can a true leader rely solely on the competencies dominated by their head alone

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The Three Brains

**O
T
H
E
R

B
R
A
I
N
S**

- Brain in Skull
 - Midbrain
 - Brain Stem
 - Central Nervous System
- Heart Brain
 - Autonomic Nervous System
- Gut Brain
 - Muscles/Joints
 - Skin

Bonnie Baddenoch 2019

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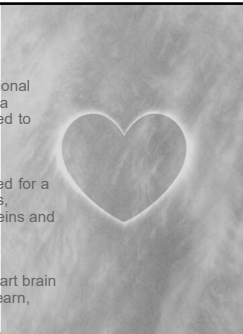
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Three brains of leadership- Heart

Dr. J. Andrew Armour introduced the concept of a functional brain in the heart. His work revealed that the heart has a complex intrinsic neural network sufficiently sophisticated to qualify as a 'brain' in its own right.

The heart's neural network meets all the criteria specified for a brain including several types of neurons, motor neurons, sensory neurons, interneurons, neurotransmitters, proteins and support cells.

Its complex and elaborate neural circuitry allows the heart brain to function independently of the head brain and it can learn, remember, feel and sense.



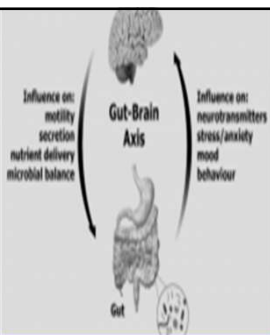
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Enteric Brain

Neurobiologist Dr. Michael Gershon published his pivotal book,(1998) 'The Second Brain', in which he described the culmination of over a decade of research and discovery that the gut also contains a complex and fully functional neural networkor 'brain'.

The gut brain, also known as the enteric brain, contains over 500 million neurons and sends and receives nerve signals throughout the chest and torso and innervates organs as diverse as the pancreas, lungs, diaphragm and liver



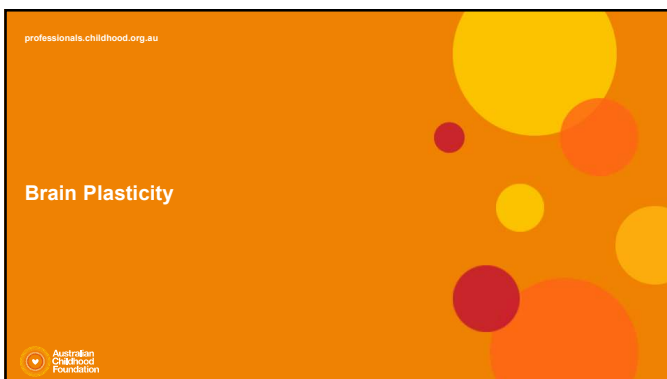
The diagram illustrates the Gut-Brain Axis. At the top is the brain, and at the bottom is the gut. A central vertical line connects them, labeled 'Gut-Brain Axis'. On the left side, an arrow points from the brain to the gut, labeled 'Influence on: motility, secretion, nutrient delivery, microbial balance'. On the right side, an arrow points from the gut to the brain, labeled 'Influence on: neurotransmitters, stress/anxiety, mood, behaviour'.

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Brain Plasticity



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Neuroplasticity



- The brain has been found to have the ability to actually change itself physically, this ability to change itself is called "neuroplasticity".
- Neuroplasticity refers to the ability of neurons to forge new connections, to blaze new paths through the cortex, even to assume new roles-neuroplasticity means rewiring the brain.
- We can educate ourselves and understand how information is processed and used by our brains so we can use it to become better Leaders and managers have success in learning how to use this to get our teams to get their brain to execute in ways that they have not in the past .

• Dr. ADHD M. Schwartz, M.D. 2002.

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Neuroplasticity




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LEADING WITH THE BRAIN IN MIND



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Leadership through neurobiology

- Understanding how the human brain works and how we function at our best is both fascinating and critical if we want to continue to grow and improve as leaders.
- *"The brain is a far more open system than we ever imagined, and nature...has given us a brain that survives in a changing world by changing itself."*

Norman Doidge



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LEADING WITH THE BRAIN IN MIND

The brain is, first and foremost, a survival tool and its found responding to threat and reward to be effective at guaranteeing survival.

Put simply,

- Your brain and your team members' brain work to move away from threats and move toward rewards.
- This autonomic response occurs through the **amygdala**.
- When a threat response is activated, it has a severely negative impact on our cognitive performance.
- When the limbic system goes into its automated response, fewer resources (oxygen and glucose in particular) become available to the **prefrontal cortex**—the part of the brain where conscious thought takes place.

Threat -impact of Coronavirus

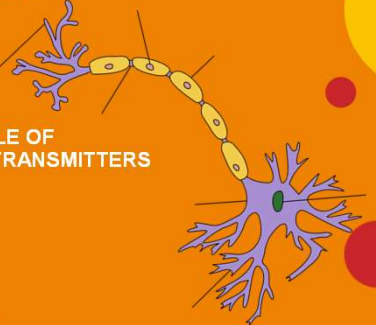


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THE ROLE OF NEUROTRANSMITTERS



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Hypothalamic-pituitary-adrenal axis.

- The stress response system- neurotransmitters

The diagram illustrates the HPA Axis. The Hypothalamus releases Corticotropin Releasing Hormone (CRH), which stimulates the Anterior Pituitary to release Adrenocorticotropic Hormone (ACTH). ACTH then stimulates the Adrenal Cortex to release Cortisol (CORT). Cortisol exerts negative feedback loops on the Hypothalamus, Anterior Pituitary, and Adrenal Cortex to inhibit further hormone release.

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NEUROTRANSMITTERS

Adrenaline
What It Is: Commonly known as the fight or flight hormone, it is produced by the adrenal glands after receiving a message from the brain that a stressful situation has presented itself.

Norepinephrine
What It Is: A hormone similar to adrenaline, released from the adrenal glands and also from the brain.

Cortisol
What It Is: A steroid hormone, commonly known as the stress hormone, produced by the adrenal glands.

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NEUROTRANSMITTERS

Dopamine
What it is: Dopamine is an important neuromodulator that exerts widespread effects on the central nervous system (CNS) function


Serotonin
What it is: Serotonin is a neurotransmitter, and is released by neurons in the pineal gland of the brain but can affect structures all over the body. Some of the effects of serotonin seem unrelated, making this compound one of the most diverse in the body.

Oxytocin
What it is: Oxytocin is a hormone that is made in the brain, in the hypothalamus. It is transported to, and secreted by, the pituitary gland, which is located at the base of the brain.

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TASTES LIKE CHOCOLATE



- When fully engaged, there is an activation of reward and self-regulation circuitry. Dopamine is released directly into the prefrontal cortex and associated regions. This positively affects a wide range of cognitive and emotional functions by increasing brain resources and functional connectivity. When this system is activated, we receive feedback that the activity is good, rewarding and enjoyable.
- By further pursuing these activities, the mechanisms reinforce the pleasure of activity by releasing even more dopamine.
- In this reward state, we experience increased cognitive resources, a wider field of perceptual view and solve complex problems with insight and creativity and more actionable ideas.

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SMELLS LIKE FEAR


- Disengagement activates the threat circuitry. It includes anything that is an 'avoid' response, including fear, anxiety, lack of safety and depression.
- In this threat state, serotonin is released into neural pathways that activate the hypothalamus, triggering the fight or flight response. **Adrenaline** commonly known as the fight or flight hormone. Followed by **cortisol** a steroid hormone, commonly known as the stress hormone is produced by the adrenal glands.
- Activation of threat circuitry has a profound effect on engagement and directs large amounts of brain resources to peripheral regions, and decreases the efficiency of attention that reduces working memory, narrows field of view and offers a generally pessimistic attitude.

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ACF INC. Model



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The ACF Inc. Model

Increase cortical brain functioning

- Increase reward
- Higher cognitive function
- Meet social needs
- Planning
- Connection

Manage lower brain responses

- Reduce threat
- Co regulate
- Build connection
- Self & co-regulation

Autonomic

- Certainty and change
- Followership
- Integration
- Neuroception
- Connectedness

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LEADING WITH THE BRAIN IN MIND

- The ACF Inc. model is designed to help us to understand the neuroscience of leadership.
- The model identifies six key fundamental areas of the neurobiology of leadership
- The model explores the neuroscience of interpersonal primary rewards or threats that are important to the brain and how this can be used for collaborating with and influencing people.

Focusing on leadership alone is like trying to understand clapping by studying only the left hand." Jonathan Haidt

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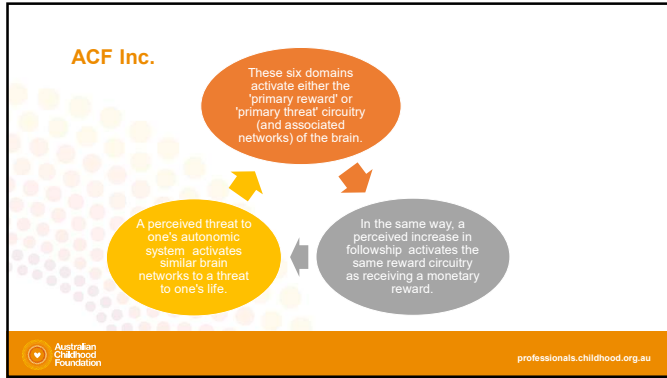
ACF INC

The ACF Inc. model involves six domains of human social experience related to integration of brain and body:

1. **Autonomic:** provides an understanding of stress/fight/flight responses.
2. **Certainty and change:** feeling safe and being able to see the future
3. **Followship:** the other side of leadership the ability to take direction well, to be part of a team and to deliver on what is expected of you
4. **Integration:** It is a flowing interconnection that enables action, change, flexibility and growth
5. **Neuroception-** stimulus that has the potential for increasing a person's experience/sense of safety that recruits the more advanced neural circuits that support prosocial behaviors in a social engagement system.
6. **Connectedness** is a sense of safety with others - relationships.

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ACF Inc.

The model is a summary of important discoveries from neuroscience about the way people interact socially. The model is built around the three parts of the brain and the associated state of the brain and responses:

1. The capacity of the thinking/cognitive (Neocortex) brain to be able to make decisions, solve problems and collaborate with others is reduced by a threat response and increased under a reward response (Elliot, 2008).
2. The threat response is intense and frequent impacting on emotions and memory of perceived certainty/safety (Midbrain) across social interactions (Porges.S.W Phd. 2009).
3. The survival (reptilian) brain responds to social threats and rewards with the same intensity as physical threats and rewards (Lieberman, & Eisenberger, 2009).

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Autonomic

Understanding the role of autonomic arousal on learning, and the impact of negative emotions on cognition inform new ways of understanding leadership behaviour

Autonomic responses are markers of emotion, attention, decision-making

It is an emerging methodology for application in understanding leadership


Research on challenging experiences which simulate leadership challenges show that these challenges stimulate the body's autonomic nervous system response

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Autonomic

- A stressful situation — whether something environmental, such as a looming work deadline, or psychological, such as persistent worry about losing a job — can trigger a cascade of stress hormones that produce well-orchestrated physiological changes.
- A stressful incident can make the heart pound and breathing quicken. Muscles tense and beads of sweat appear



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Autonomic

Schore (2002) notes that for adults, in non-traumatic circumstances, "higher cortical areas" act as "control centers," therefore top-down processing enables us to:

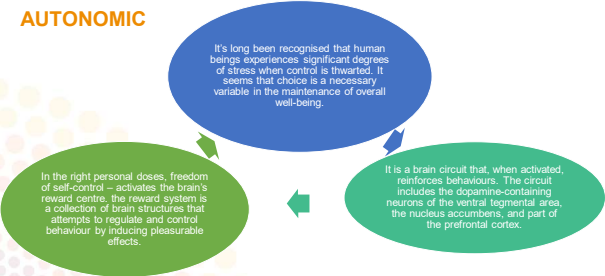
- outline plans,
- determine what to accomplish for the day,
- structure time to meet particular goals.

Emotions and sensations, such as feelings of frustration, fatigue, or physical discomfort, are overridden by the cortex in order to accomplish these priorities.

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AUTONOMIC



It's long been recognised that human beings experience significant degrees of stress when control is thwarted. It seems that choice is a necessary variable in the maintenance of overall well-being.

In the right personal doses, freedom of self-control — activates the brain's reward centre. The reward system is a collection of brain structures that attempts to regulate and control behaviour by inducing pleasurable effects.

It is a brain circuit that, when activated, reinforces behaviours. The circuit includes the dopamine-containing neurons of the ventral tegmental area, the nucleus accumbens, and part of the prefrontal cortex.

Feeling safe requires a unique set of cues to the nervous system that are not equivalent to physical safety or the removal of threat

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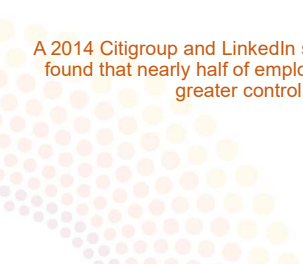
How do you lead and create a safe autonomic responsive environment ?



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A 2014 Citigroup and LinkedIn survey found that nearly half of employees would give up a 20% raise for greater control over how they work.





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CERTAINTY (Change)

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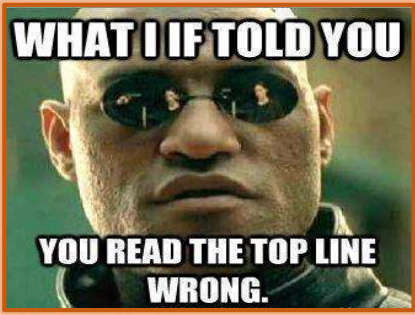
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CERTAINTY

- The brain craves certainty .
- Certainty is, neurologically speaking, its own reward. When people are uncertain the brain locks into basic survival mode and uses more energy to understand the situation.
- Uncertainty decreases activation in reward circuits, increasing it in threat neural circuitry. There is a spectrum to certainty and uncertainty, and the brain will react accordingly.
- A sense of uncertainty about the future generates a strong threat or 'alert' response in your limbic system.

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A meme featuring Morpheus from the movie The Matrix. He is wearing his signature sunglasses and has a serious expression. The text overlaid on the image reads: "WHAT I IF TOLD YOU YOU READ THE TOP LINE WRONG." The meme is set against a background of a grid of dots in shades of yellow and orange.

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CERTAINTY

- A 2005 study called *Neural Systems Responding to Degrees of Uncertainty in Human Decision-Making* found that even a small amount of ambiguity activates the amygdala and with it the threat response.
- The more ambiguity, the more the threat response is activated, which reduces our openness to learning. It also means we are less likely to connect with others and we tend to be more risk averse.
- This has become known as the Ellsberg paradox.

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Certainty



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Creating change within certainty

- By using neuroscience it is more effective to create change
- In the right personal doses, autonomy – freedom of self-control – activates the brain's reward centre. the reward system is a collection of brain structures that attempts to regulate and control behaviour by inducing pleasurable effects. It is a brain circuit that, when activated, reinforces behaviours. Focus on relationships, build habits, activate insight, focus on learning
- Build employee resilience in the face of setbacks. Focusing on the neuroscience means leaders can expect repeated results, no matter the context.

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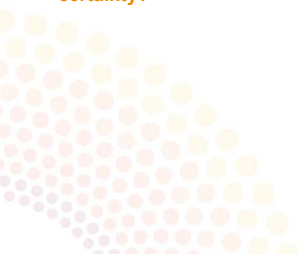
Organisation Culture difficulty of change



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As a leader how can you create change if the brain desires certainty?



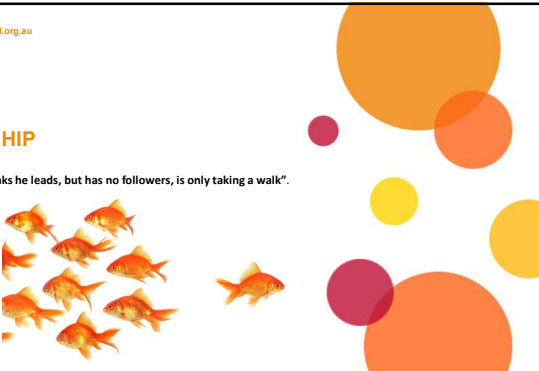
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FOLLOWERSHIP

"He who thinks he leads, but has no followers, is only taking a walk".



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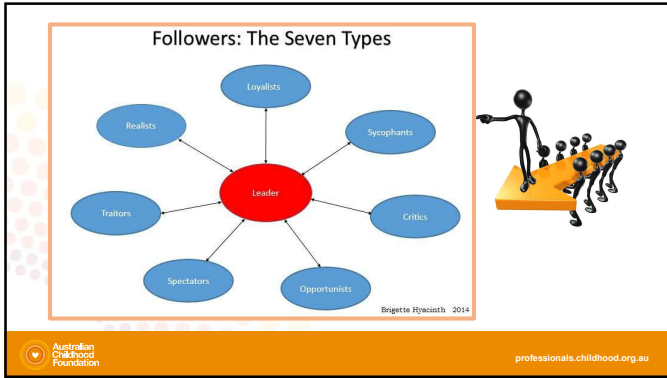
FOLLOWERSHIP

- To be a leader you need followers. (Most leaders are also followers
Boards, trends, government policy)
- Critical factors for followership:
 - Trust: Through everyday behaviour "followership" requires that the leader provides evidence they can be trusted.
 - Stability: Leaders with strong "followership" contain flight/fight responses in the face of crisis and so regulate those around them.
 - Compassion: Strong "followership" leaders have unrelenting passion for people and show empathy when those people are enduring hard times.
 - Hopes: "Followership" requires that a leader has unwavering belief that their service will not only succeed but will change lives.
- These require **attunement and connection**, and understanding our own window of tolerance
- People display **followership** when they express, through their words or actions, respect and support for a person they view as their leader



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FOLLOWERSHIP

- Perceptions of exclusion generate strong limbic system responses that can trigger resentment, hostility, anger and even rage.
- Whilst peoples' ideas of followership are wide ranging, even small actions perceived being on the outer, can activate the flight or fight response.
- Loyalty and trust in organisations and workplace relationships create followership and beliefs about leaders being inclusive and complimentary.
- These beliefs may not be openly expressed, they are nonetheless motivating choices and impact behaviour.

Harvard Business Review Building Great teams

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FOLLOWERSHIP


- Staff are constantly trolling the environment for examples of compliments.
- When they perceive inclusion and positive feedback feel-good dopamine is activated in the brain; with a sense of trust increasing levels of reinforcing oxytocin are released.
- There are plenty of reasons to ask more questions like "What would you do?" or "What possibilities do you see here?" These are open-ended, thought-provoking questions, not solutions disguised as questions. The most compelling reasons to ask rather than tell grounded in neuroscience.
- **Neuroplasticity** -means our brains can physically change to encourage creative thinking and new knowledge. The neurons can move into new locations in our brain when we learn. Questions can act as a catalyst for our brains to change and move forward with new insight.

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Followship in practice

- Develop neuroscience-based coaching skills
- Motivate with mental contrasting
- Ask insightful questions- What would you do?" or "What possibilities do you see here?" These are open-ended, thought-provoking questions, not solutions disguised as questions.
- Encourage creative thinking
- Prime your staff to question



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Integration




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Integration

- Integration is at the heart of interpersonal neurobiology.
- Defined as the linkage of differentiated components of a system, integration is viewed as the core mechanism in the cultivation of well-being.
- In an individual's mind, integration involves the linkage of separate aspects of mental processes to each other, such as thought with feeling, bodily sensation with logic.
- In a relationship, integration entails each person's being respected for his or her autonomy and differentiated self while at the same time being linked to others in empathic communication.



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Left hemisphere- right hemisphere integration

The left mode reprocesses information received by the right and functions most efficiently in familiar situations.

When connected to a well-integrated right, its can develop systems to manifest the relational values we currently hold. To do this, it takes what is dynamic and flowing, and makes it static so that it can be manipulated like pieces on a chessboard.

When the left is not well-connected to the right, it shapes the world according to the mechanical rules of production – how can we make the greatest numbers of widgets of the same quality in the shortest time.

The left has an unrealistically optimistic view intermixed with paranoia, and values happiness over meaning, tasks and behavior over relationships.



The right mode specializes in "betweenness" – taking in the relational surround. It is about "us" – how we are related to one another.

The right takes in novel experience as it is unfolding in the moment, and also takes the leading role in stressful situations.

Looking through a well-integrated right mode lens may open the possibility of valuing relatedness over task.

Looking through a poorly-integrated right may open the door to chaotic relatedness – or may drive us toward protective isolation in the left mode.

The right has a felt sense and realistic view of the suffering in the world, and is concerned with meaning.

Thanks to Iain McGilchrist and Bonnie Bodenoch 2019

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Integration

" Integration is seen as the essential mechanism of health as it promotes a flexible and adaptive way of being that is filled with vitality and creativity.

The ultimate outcome of integration is harmony. The absence of integration leads to chaos and rigidity—a finding that enables us to re-envision our understanding and how we can work together in the fields of mental health, education, and other disciplines, to create a healthier, more integrated world."


Seigel D. 2017.

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Neuroception



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“When feeling safe and connected, people can unleash their innate genius for radical innovation, ...”
 Dr. Sunnie Giles

STEPHEN PORGES PUTS IT THIS WAY:

- Neuroception is how neural circuits distinguish whether situations or people are safe, dangerous, or life threatening.
- Neuroception explains why a baby coos at a caregiver but cries at a stranger, or why we enjoy a friend’s embrace but view a hug from a stranger as an assault.
- Our more primitive neural circuits operate by “neuroception” — totally involuntarily.

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Neuroception

Safety:
 When you interconnect your thoughts, emotions and goals with other people in your in group, your neuroception of safety process facilitates the release of oxytocin, the bonding neurotransmitter

A diagram of the human brain showing the amygdala. A red box labeled 'FEAR' is connected to a sad face icon. A green box labeled 'SAFETY' is connected to a happy face icon. The amygdala is labeled 'AMYGDALA'.

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How would you start to create neuroceptive safety in your workplace?

A photograph showing several hands of different colors (red, green, blue) reaching out to hold a small globe of the Earth.

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CONNECTEDNESS



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CONNECTEDNESS

- Neuroscientist John Cacioppo talks about the need for safe human contact being a primary driver, like the need for food (Cacioppo, 2008). In the absence of safe social interactions the body generates a threat response.
- A feeling of relatedness is what you get when you feel like you belong in a group, when you are with others of your 'in group'.
- Just as traditional neuroscience/therapeutic interventions had for many years considered the brain as an isolated entity and largely ignored the influences of the social environment as a factor; now management theorists will have to recognise the considerable impact of social structures on the operations of mind and body.

"Where attention goes, neural firing flows, and neural connection grows."
Seigel 2018.

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Connectedness

- Humans are social animals and our brains are geared to connect. As we relate more easily with people we perceive as similar, great leaders make a conscious effort to create positive connections in every interaction. They avoid making assumptions about people and stay curious and open with each individual they meet and lead.
- They also focus on building trust, creating safety and enhancing the social capital of the organisation and team.
- Mirror neurons -**Mirror neurons** can be defined as a group of **neurons** that activate when we perform an action or when we see an action being performed. **Mirror neurons** are essential for imitation which is key in the learning process.

Marcia Jacobson 2008

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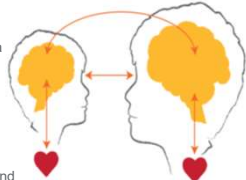
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CONNECTEDNESS

It seems too good to be true, but effective 1-on-1 communication really can drive engagement across entire organizations.

What do we mean by effective?

- It means managers should ask rather than tell.
- They should move direct reports into what psychologists call a "toward" state, rather than an "away" state.
- They should harness growth mindset to build employee resilience in the face of setbacks.
- Focusing on the science means leaders can expect repeated results, no matter the context.



Simply put, quality conversations can't happen unless leaders and teams CONNECT. "I see you." "I am here"

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The model in leadership.

By understanding the neurobiology of social and behavioural drivers, we are better able to design interactions with people to maximise rewards and minimise threats.

- Autonomic:** Self regulation/awareness-ability to control or redirect limbic responses
- Certainty:** Be transparent and consistent be enable people to feel safety
- Followerhip:** Be an inspiring leader understand the catalyst of followers
- Integration:** Maximise individuals regulation and somatic experiences
- Neuroception:** Motivation and passion to both calm and provide arousal
- Connectedness:** Influence and inspire by understanding the neurobiology of connection

Leading with understanding, trust, gentleness, curiosity, warmth, inclusive welcome and inner stillness.

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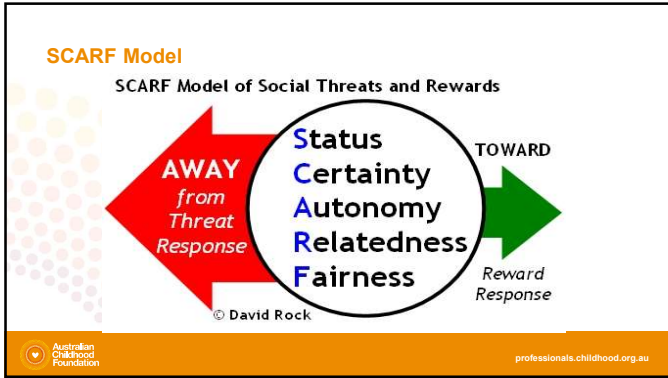
Mindfulness

- Recent studies indicate that mindfulness meditation training interventions reduce stress and improve stress-related health outcomes
- Meditation training can improve mood and emotion regulation, yet the neural mechanisms of these affective changes have yet to be fully elucidated.
- Meditation training was associated with less amygdala reactivity to positive pictures relative to controls, but there were no group differences in response to negative pictures. Reductions in reactivity to negative stimuli may require more practice experience or concentrated practice.

Cresswell et al 2014

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Questions, Comments, Contributions, Yeah, but's?

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References

- Carter CS, Porges SW. (2013). The biochemistry of love: an oxytocin hypothesis. *EMBO Reports*. 2013
- Chaleff, I. 2009. *The Courageous Follower: Standing Up to and for Our Leaders*. Penguin Random House.
- Creswell, J. D., L. E. Pacilio, E. K. Lindsay, and K. Brown. (2014). "Brief Mindfulness Meditation Training Alters Psychological and Neuroendocrine Responses to Social Evaluative Stress." *Psychoneuroendocrinology* 44: 1–12.
- Dossey, L. (2014). *One Mind: How Our Individual Mind Is Part of a Greater Consciousness and Why It Matters*. New York: Hay House.
- Kent State University www.kent.edu/csl/leadership/resources/upload/fellowship.pdf
- Mayer, E. A. (2011). "Gut Feelings: The Emerging Biology of Gut-Brain Communication." *Nature Reviews Neuroscience* 12: 453–66.
- Pentland A. 2012 *The New Science of Building Great Teams*. Harvard Business Review
- Perry, B.D. 2002. Childhood Experience and the Expression of Genetic Potential. *Brain and Mind* 3: 79-100
- Porges SW. (2009). The polyvagal theory: New insights into adaptive reactions of the autonomic nervous system. *Cleveland Clinic Journal of Medicine*, 76:S86-90.
- Schore, A. 2008. *Modern Attachment Theory: The Central Role of Affect Regulation in Development and Treatment* (Clinical SocialAware: The Science and Practice of Presence--The Groundbreaking Meditation Practice I Work Journal; 36: 9-20).
- Seigel D. 2018. *Aware: The Science and Practice of Presence--The Groundbreaking Meditation Practice*. Tarcher Perigee.

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