

NEUROSCIENCE101

hewitt-gleeson

YOU do not exist! The Theory of You is an idea from your brain. It's a delusion. There are no neurons anywhere in the brain that can be found to support the idea of an existential you.

Your brain, however, really does exist. It's your brain that tells you what you are to do next. So far on Earth there have existed about ten billion human brains yet no two brains have ever been the same. Every brain is unequal. Some brains have better biological luck than other brains. This is a fact of science that philosophers don't like. And politicians just don't understand.

In today's fast world of neuroscience and AI research we can see that different brains now have different perspectives. In simplistic terms:

- The Y O U delusion: *I tell my brain what to do.***
- Neuroscience101: *My brain tells me what to do.***

My own brain is a 1947 model. It was fully constructed from 1946 to around 1972. There has also been continuous wiring going on since then, even up to the finishing of this sentence. My brain always tells me what to do next.

Flow. Dopamine flow.

So, the Theory of You is just a mind game that your brain plays, quite brilliantly. In this book we will look at ten games that brains play, quite brilliantly. It's *Neuroscience101*, a personal view.

**- Michael Hewitt-Gleeson, Rome 2023,
author, *Software For Your Brain* (1989).**

“We don’t *change* our minds. Our minds, which are the end products of all the biological moments which came before, are *changed* by circumstances around us.”

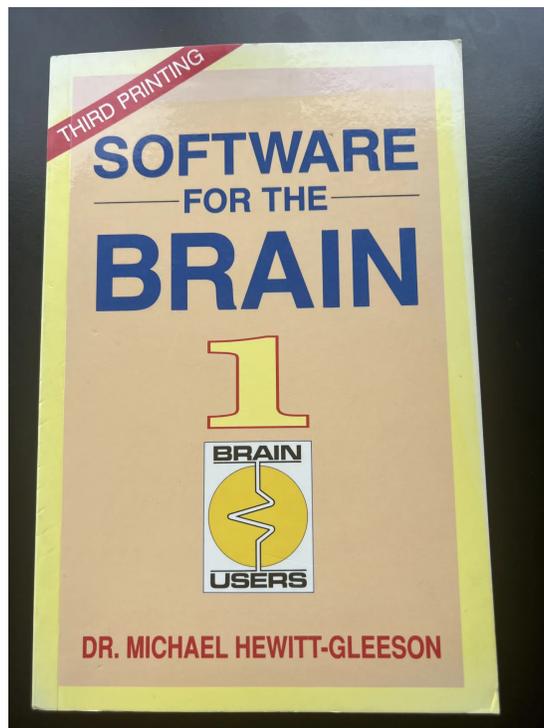
**- Robert M. Sapolsky,
Determined: Life Without Free Will, Penguin 2023. USA.**

PART ONE

Neuroscience101

FLASHBACK!

In 1989 I published *Software For Your Brain* in the US. It had anticipated the coming wave of developments in both neuroscience and AI. The book was about *neuroplasticity* and how human behaviour can be changed by changes in the brain.



I described the brain as a 'nektop computer' and the book offered a cognitive code for 'brain software' to exploit and effect this.

The brain software code is known as **SDNT cvs2bvs QRH prr X10**

There was controversy in some quarters about comparing the brain to computers but it became an international best-seller in the 90s.

The book's anticipated wave of neuroscience and AI developments has already become an existential reality. Like a digital Big Bang the changes have been on such an exploding scale that – with neuroscience and AI – there seems little point in comparing today's reality with that of 20 years ago.

THE NEW BOOK

In 2023 I saw the need to again anticipate the coming developments in neuroscience and AI by writing about a new way of looking at the human brain/behaviour problem that is true to the current trends of science and, at the same time, offers a practical way to apply these fresh insights.

This book shows there are two choices for strategic thinking but both are incompatible. Your own brain's strategy is either one or the other. Not both.

But change can happen!

NEUROPLASTICITY

As a result of a change in its circumstances *neuroplasticity* is the way change happens in the human brain and, as you'll see in Part Two, *dopamine* is the neurotransmitter of the twenties. AI cannot match the human brain's plasticity. AI still cannot do dopamine. Not yet at any rate.

So, *Neuroscience101* is this year's book.

My recent books are *fastbooks*. I call them fastbooks because you can read them in 10 minutes. This seems helpful in today's compressed environment. By all means pass the book on to someone who may find it useful.

Is *Neuroscience101* controversial?

Yes, I expect it is likely to be controversial to those who were upset by *Software For Your Brain*. But it's well supported by current neuroscience and that's what's most important to me.

ONWARDS AND UPWARDS

What is also important is that these developments in neuroscience and AI can be applied to create real value.

For example, in 2023 and continuing in 2024 my focus is on coaching coaches in the science and practical use of lateral thinking/x10 thinking for much better results on and off the field.

In 2023 I worked with coaches across national and international codes including: CRICKET, AFL, AFLW, UK FOOTBALL, AMERICAN FOOTBALL, WORLD CUP, RUGBY, BASKETBALL, NBA, LACROSSE.

In 2024 there will also be bespoke 'deep dive' coaching for a limited number of coaches and SOT is working on a new AI project.

Compatible with the fast developments in neuroscience my two axioms for changing human behaviour and raising performance are:

1 • There's nothing more important in life than *coaching*.

2 • There's nothing more powerful on earth than *lateral thinking*.

ON COACHING

Coaching is anytime we are trying to change the behaviour of another person.

There are sports coaches, business coaches, military coaches, religious coaches, academic coaches, and social coaches like parents, family and peers. Some are professional others are not.

All coaching is brain coaching. There are no exceptions to this. Because all human behaviour is led by human thinking and all thinking is in the brain which includes the nervous system.

Any deliberate attempt to change human behaviour must start with the human brain. There is no magic. There is no other way.



When it comes to neuroscience we can see that different brains are using different perspectives depending a lot on the individual brain's cultural and educational wiring.

A traditional pre-science view is: *I tell my brain what to do.* A current post-science view is: *My brain tells me what to do.*

Using a diverse chemistry of over 100 neurotransmitters (adrenalin, glutamate, serotonin, dopamine, oxytocin, endorphins, vasopressin, histamine etc), your brain *always* tells you what to do next. Moment by moment. There's no room left for magic.

You can never defy your brain. Your brain leads your behaviour every time, without exception.

You have never, on any single occasion of behaviour, told your brain what to do. Ever.

At any given moment you do what your brain commands through its diverse range of emotional messaging such as anger, fear, shame, joy, anticipation, surprise, trust, disgust and so on.

However, brains do change. They are indeed always changing. Always. The scientific term is *neuroplasticity*.

Today's brain dictates today's behaviour. Tomorrow's brain dictates tomorrow's behaviour. This week's/next week's. This year's/next year's. Etc etc.

This, of course, is also happening from moment to neuro-moment.

So, this moment's brain dictates this moment's behaviour and the next moment's brain dictates the next moment's behaviour.

And, the brain that we have, at any particular moment, is the end product of all its biological moments which came before this moment.

For coaches, this is good news. What can take place between the NOW brain and the FUTURE brain ... is *coaching*. In simplistic terms:

NOW + COACHING = FUTURE

And so we come to The First Law of Neuroscience:

You cannot defy your brain.

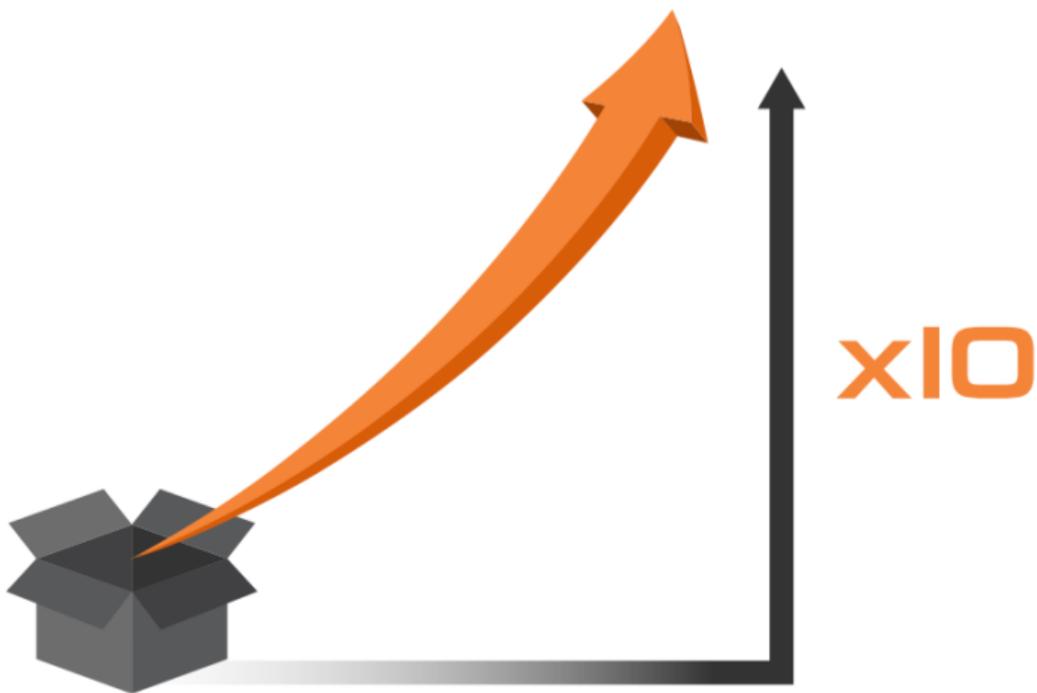
We can only do what our brain tells us to do. However, we can intervene with coaching to change our future brain.

We can curate our brain, we can rewire our brain through neuroplasticity so that a future brain will tell us to behave in a different way.

This is why I say there's nothing more important in life than coaching.



A picture of me with my coach, Edward de Bono, when I completed the world's first PhD in Lateral Thinking, in New York in 1980. The successful PhD project was conducted across 26 hospitals evaluating ideas from 40,000 New York healthcare employees.

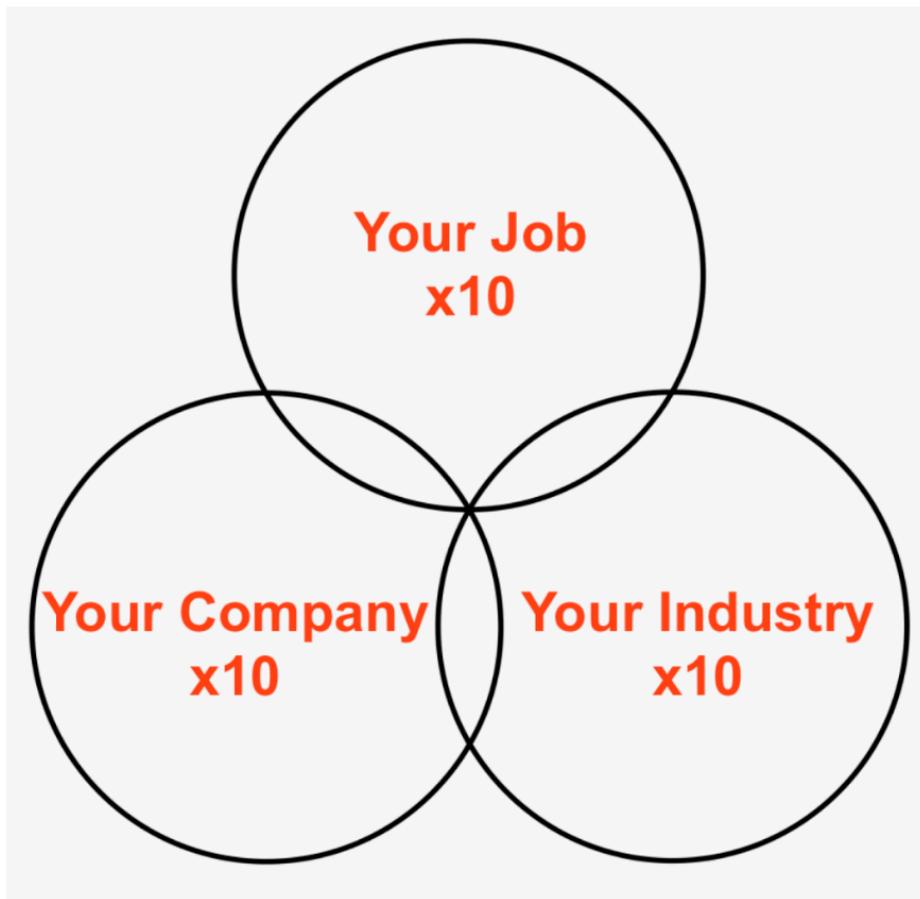


In a competitive world like sports coaching or business coaching there is nothing more powerful than ESCAPE.

That is, the cognitive ability to escape from the box of logical thinking to the big, wide world of lateral thinking.

More options, more possibilities, more alternatives, more choices leading to much better behaviours.

This is why there's nothing more powerful on earth than lateral thinking. Your brain also likes numbers and so a useful synonym for lateral thinking is x10 thinking.



THE Y O U DELUSION

Repetition is very good for learning in the human brain so let's repeat some of the main points here.

The First Law of Neuroscience:

You cannot defy your brain.

It's your brain that tells your body what to do next. YOU do not exist! The Theory of You is an interesting idea from your brain. It's a delusion. There are no neurons anywhere in the brain that can be found to support an existential you.

Your brain, however, really does exist. Yes, it's your brain that tells you what you are to do next. So far on Earth there have existed about ten billion human brains yet no two brains have ever been the same. Every brain is unequal. Some brains have better biological luck than other brains. This is a fact of science that philosophers don't like. And politicians just don't understand.

In today's fast world of neuroscience and AI research we can see that different brains now have different perspectives. In simplistic terms:

- The Y O U delusion: *I tell my brain what to do.*
- Neuroscience101: *My brain tells me what to do.*

Sometimes your brain tells you to be angry, sometimes to be sad. It tells you to be surprised, be trusting or be fearful, too.

Oh, Surprise?

No, it's not *you* who tells your brain to be surprised, because there's no such *think* as you. Because of circumstances in your environment your brain may sometimes say, "Be surprised!"

And so you behave accordingly.

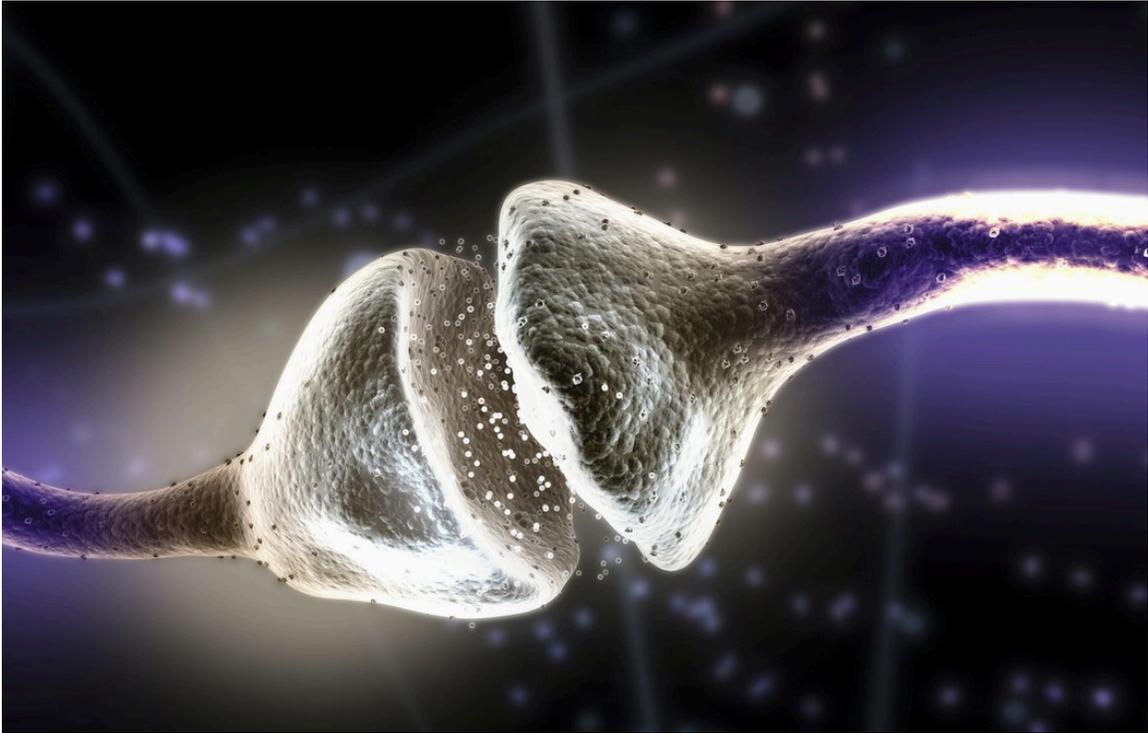
All these games are in your brain's daily repertoire of triggers and emotions.

Brains play games. For example, *determination* is a brain game and so is the brilliant game of ... *anticipation*.

Flow, dopamine, flow.

Your brain is already using a diverse chemistry of over 100 neurotransmitters. These are chemical messengers like adrenalin, glutamate, serotonin, dopamine, oxytocin, endorphins, histamine etc.

At the neuron to neuron level, all this constant neuromessaging 24/7/365 helps to move limbs, to feel sensations and to keep the heart beating.



All this IN/OUT messaging allows your brain to receive and respond to the information your body receives from its internal and external environment.

This is how your brain *always* tells you, which is to say your body, what to do next. Moment by neuromoment.

There's no room left for magic.

EMOTIONS ARE BRAIN GAMES

OK. So, your brain always tells you what to do next. It does this via the messaging of a wide array of chemicals called neurotransmitters.

You have never, on any single occasion, told your brain what to do. Ever.

You can never win. Your brain scores perfectly every time, without exception.

For example, there may be times when your brain tells you 'be angry'. You cannot defy your brain.

At any particular moment you do what your brain says. In a different environment you may feel your brain directs you to 'be fearful'.

In Part Two of this book, let's look at ten examples of this. Ten Brain Games.

These are ten emotions, feelings and behaviours that your brain may tell you to do next ... quite brilliantly.

PART TWO

Flow. Dopamine. Flow.

HOW TO MANAGE YOUR DAILY DOPAMINE WITH TEN BRAIN GAMES.

THESE ARE TEN EMOTIONS YOUR BRAIN GAMES WITH YOU. THERE ARE, OF COURSE, MANY OTHERS.



Be angry



Be fearful



Be determined



Be ashamed



Be joyful



Be sad



Be anticipating



Be surprised



Be trusting



Be disgusted

NOTE: This SOT list of Ten Basic Emotions is curated from the works of Darwin, Plutchik and Sapolsky:

•• Darwin Charles, Ekman Paul, Prodger Phillip (1998) *The Expression of the Emotions in Man and Animals*, 3rd edn, London: Oxford University Press.

•• Plutchik, R. & Kellerman, H. (1980). *Emotion: Theory, Research and Experience. Vol 1, Theories of Emotions*. New York: Academic Press.

•• Sapolsky, Robert. (2017) *Behave: The Biology of Humans at Our Best and Worst*. (Penguin Press).

WHEN DID YOUR BRAIN SAY ...



BE ANGRY

FIGHT OR FLIGHT?

THIS IS A BASIC STRESS RESPONSE
OF THE BRAIN TO PROBLEMS
THAT ARISE THAT MAY THREATEN
OUR SOCIAL STATUS
OR EVEN OUR SURVIVAL.

IF, ON THAT RARE OCCASION,
OUR BRAIN HAS TO CHOOSE FIGHT
THEN ANGER MAY HELP.

SO YOUR BRAIN MAY USE
TESTOSTERONE TO COMMAND ...



BE ANGRY

WHY DID YOUR BRAIN TELL YOU ...



BE FEARFUL

**IN ANY FIGHT OF LAST RESORT
ONE PARTY, OR PROBABLY BOTH
PARTIES, MAY LOSE.**

BE INJURED.

OR, EVEN FACE DESTRUCTION.

FEAR HAS SAVED MANY LIVES.

**WE CAN THANK OUR AMYGDALA FOR
FEAR. BE AFRAID.**

**IT CAN HELP PROTECT FROM
DANGER.**



BE FEARFUL.

THERE ARE TIMES WHEN
YOUR BRAIN SAYS ...



BE DETERMINED

DETERMINATION IS ONE OF THE
BRAIN'S SURVIVAL EMOTIONS TO
HELP OVERCOME OBSTACLES.

WHEN GIVING IN (OR UP) IS THE
EASIER THING TO DO IT'S YOUR
PRE-FRONTAL CORTEX (PFC)
THAT MAY TELL YOU IT'S TIME
TO DO THE HARDER THING, TO ...



BE DETERMINED.

AND SO IT GOES ON.
YOUR BRAIN ALWAYS TELLS YOU
WHAT NEXT TO DO, LIKE ...



BE ASHAMED

TO MINIMIZE GIVING OFFENCE TO
OTHERS OUR BRAIN EVOLVED
THE EMOTION OF SHAME.

SHAME IN THE BRAIN
MAY HELP US AVOID DAMAGING
OR INJURIOUS CONSEQUENCES.

OR SAVE US FROM ISOLATION FROM
THE GROUP.



BE ASHAMED.



BE JOYFUL

HOW DO WE KNOW
WHAT'S IMPORTANT IN LIFE,
NOT JUST URGENT.

SOCIALLY, SOME THINGS ARE SO
IMPORTANT THAT THE BRAIN FILLS
US WITH JOY. OXYTOCIN.

SOMETIMES A CASCADING WAVE
OF OXYTOCIN BLISS.

AND, THEN OUR
OXYTOCIN-ENHANCED
SOCIAL INTELLIGENCE REMINDS US
OF WHAT'S FAR MORE REWARDING
THAN JUST MAKING A LIVING.



BE JOYFUL.



BE SAD

SADNESS CONNECTS US
WITH THOSE WE LOVE.
AND, THOSE WHO LOVE US.

WE DON'T GRIEVE ALONE.
WE NEED TO GET SUPPORT.
AND GIVE SUPPORT.

YOUR BRAIN'S LIMBIC SYSTEM
WILL LET YOU KNOW,
MOMENT BY NEURO-MOMENT,
WHEN YOU ARE TO BE SAD.



BE SAD.

BUT WAIT, THERE'S MORE!



BE ANTICIPATING

**TO INCREASE OUR CHANCES
OF SURVIVAL AND GROWTH
WE NEED TO PLAN AHEAD.**

**OUR PRE-FRONTAL CORTEX (PFC),
THE DECIDER, KICKS IN
AND LOOKS FAR AND WIDE ...
AHEAD INTO THE MANY
POSSIBLE FUTURES.**

**HOPE, MOTIVATION AND
REWARD FOR THE FUTURE.**

DOPAMINE FOR DAYS!



BE ANTICIPATING.



BE SURPRISED

THAT BRAIN WAS THEN.

THIS BRAIN IS NOW.

BRAINS CHANGE.

ALL THE TIME.

MOMENT BY NEURO-MOMENT.

BUT REMEMBER ...

“We don’t *change* our minds. Our minds, which are the end products of all the biological moments which came before, are *changed* by circumstances around us.”

- Robert M. Sapolsky, *Determined: Life Without Free Will*, Penguin 2023. USA

SURPRISE IS A VERY USEFUL
EMOTION IN THE BRAIN TO HELP
FOCUS ATTENTION ON NEW
SITUATIONS AS THEY ARISE.



BE SURPRISED.

WHEN YOUR BRAIN SAYS ...



BE TRUSTING

THE NEUROTRANSMITTERS ON THE
JOB DOING THIS BRILLIANT
GAME-PLAYING WORK ARE
OXYTOCIN AND VASOPRESSIN.

TRUST BUILDS CO-OPERATION.

WE WORK BETTER
WITH THOSE WE TRUST.

WE TRADE BETTER
WITH THOSE THAT TRUST US.

WE ARE WARY
OF THOSE WE DON'T TRUST.

**SOME BRAINS
ARE VALUE-FOUNTAINS.
THESE ARE THE ONES WE TRUST.
OXYTOCIN.**

BUT DON'T BE A SUCKER.

**OTHER BRAINS
ARE VALUE-DRAINS.
THESE ARE THE ONES TO AVOID.**

NOT TRUSTING IS OXYTOCIN, TOO.

**YOUR BRAIN WILL USE OXYTOCIN TO
TELL WHEN AND WHEN NOT TO ...**



BE TRUSTING.



BE DISGUSTED

**MANY THINGS ARE UNHEALTHY
TO THE HUMAN BODY
IN THIS WORLD.
NOT JUST SPIDERS AND SNAKES.**

**THE BRAIN HAS EVOLVED
THE EMOTION OF DISGUST
TO HELP US TO AVOID WHAT,
FOR OUR BODIES,
MAY BE UNHEALTHY.**

**HERE THE INSULA AND AMYGDALA
ARE OFTEN THE BUSIEST BUT ALSO
THE PFC AND EVEN THE
DOPAMINERGIC (REWARD) SYSTEM
MAY BE SUMMONED INTO ACTION.**



BE DISGUSTED.

**PLEASE NOTE:
IN THIS FASTBOOK
ALL THE NEURONAL REFERENCES ARE REAL
BUT ONLY IN GENERAL.
OF COURSE, IN THE BRAIN,
IT'S FAR, FAR MORE COMPLICATED.**

EMOTIONS: POSITIVE AND NEGATIVE

There are important and positive survival reasons why these emotions have evolved in the Limbic System of the human brain over the many thousands of generations.

There are also negative consequences that can arise from the misfiring of any of these neuro-cognitive emotions. eg Fear can save a life but can also lead to violence or missed opportunities.

LIMBIC GAMES

While we cannot tell our brain how to respond emotionally to the **CURRENT** situation, we can use our *cvs2bvs* thinking, our brain software to change the brain so as to change the **FUTURE** emotional response.

So, in looking for a *bvs* we can acquire extra knowledge, or new experiences, or coaching or AI help or teamwork or a change in environment. In time. In space.

In our human mammal brain all these emotional responses are largely going on in our limbic system.

I call these ways to change, *The Limbic Games*. For example, these 4 main *limbic games* can involve switching:

from Anger to Surprise ... cvs2bvs

From Sadness to Trust ... cvs2bvs

From Fear to Anger ... cvs2bvs

From Trust to Joy ... cvs2bvs.

There are books, lessons, coaches, societies, religions and a wide array of cultural methods and techniques, old and new, that have been evolved to help change our brains so that we can change our emotions.

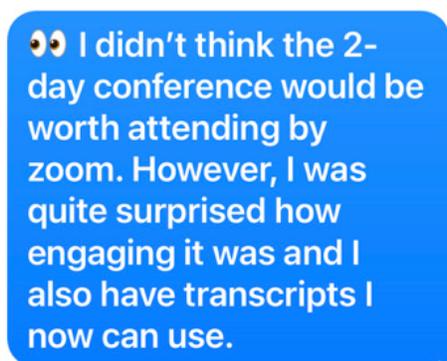
Anyone can learn to play these Limbic Games.

EMOTION EMOJIS

Here's a new tool to help you raise your awareness and understanding of your emotions and how to communicate your new insights. These are ten 'emotion emojis' which we can use to game our emotions especially when chatting with others.

Here are some simple instructions on how you can use these Emotion Emojis:

- Emotion emojis are always put at the beginning of the text message, not the end.
- An emotion emoji is a powerful thinking software for the brain. For example, the wide-eyed emoji “BE SURPRISED” is a cognitive algorithm signalling a real change in your thinking. Example: (text to tutor)



Delivered

- Emotion emojis can be sent to yourself, to others or to groups.
- AI cannot yet do any of these human brain emotions, these Limbic Games.



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Be fearful



Be determined



Be ashamed



Be joyful



Be sad



Be anticipating



Be surprised



Be trusting



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THE AUTHOR



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Michael Hewitt Gleeson is an Australian Vietnam veteran, author, cognitive neuroscientist, and lecturer. He co-founded the School of Thinking with Edward de Bono in New York in 1979. Dr Hewitt-Gleeson invented the cvs2bvs brain software and is known as the 'Father of x10 Thinking'.

In his career, he revolutionised the field of sales through his study of cognitive neuroscience. His research demonstrated the first new way to sell in 50 years.

Dr Hewitt- Gleeson's School of Thinking has disseminated over half a billion lessons since 1979.