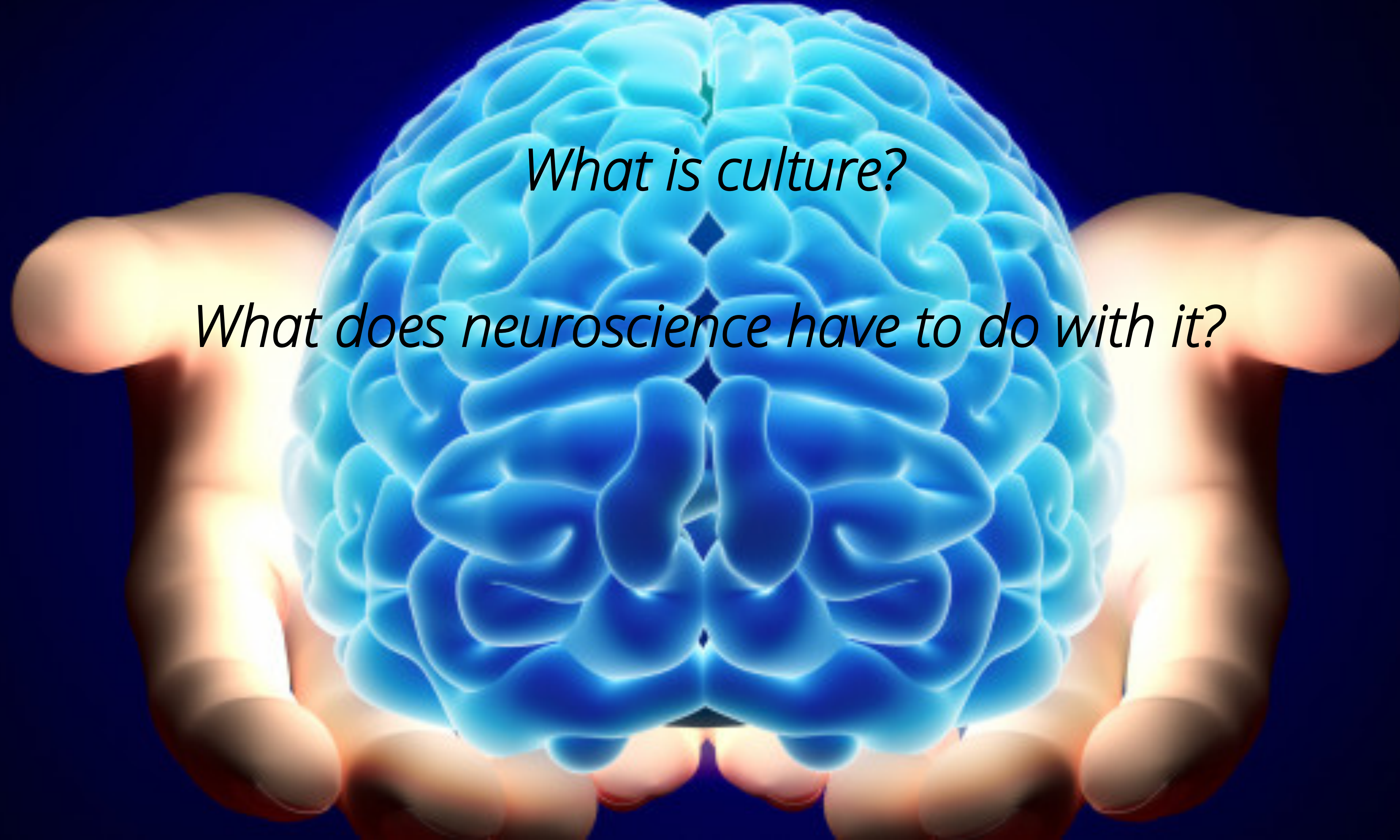


NEUROSCIENCE OF HUMAN AGILITY

Dr Melissa Casey



What is culture?

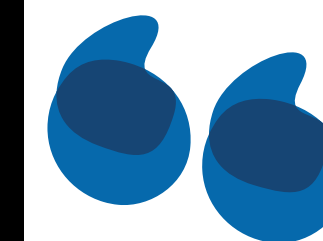
What does neuroscience have to do with it?

100 billion neurons....



Nature and Nurture become one

*100 trillion
connections*

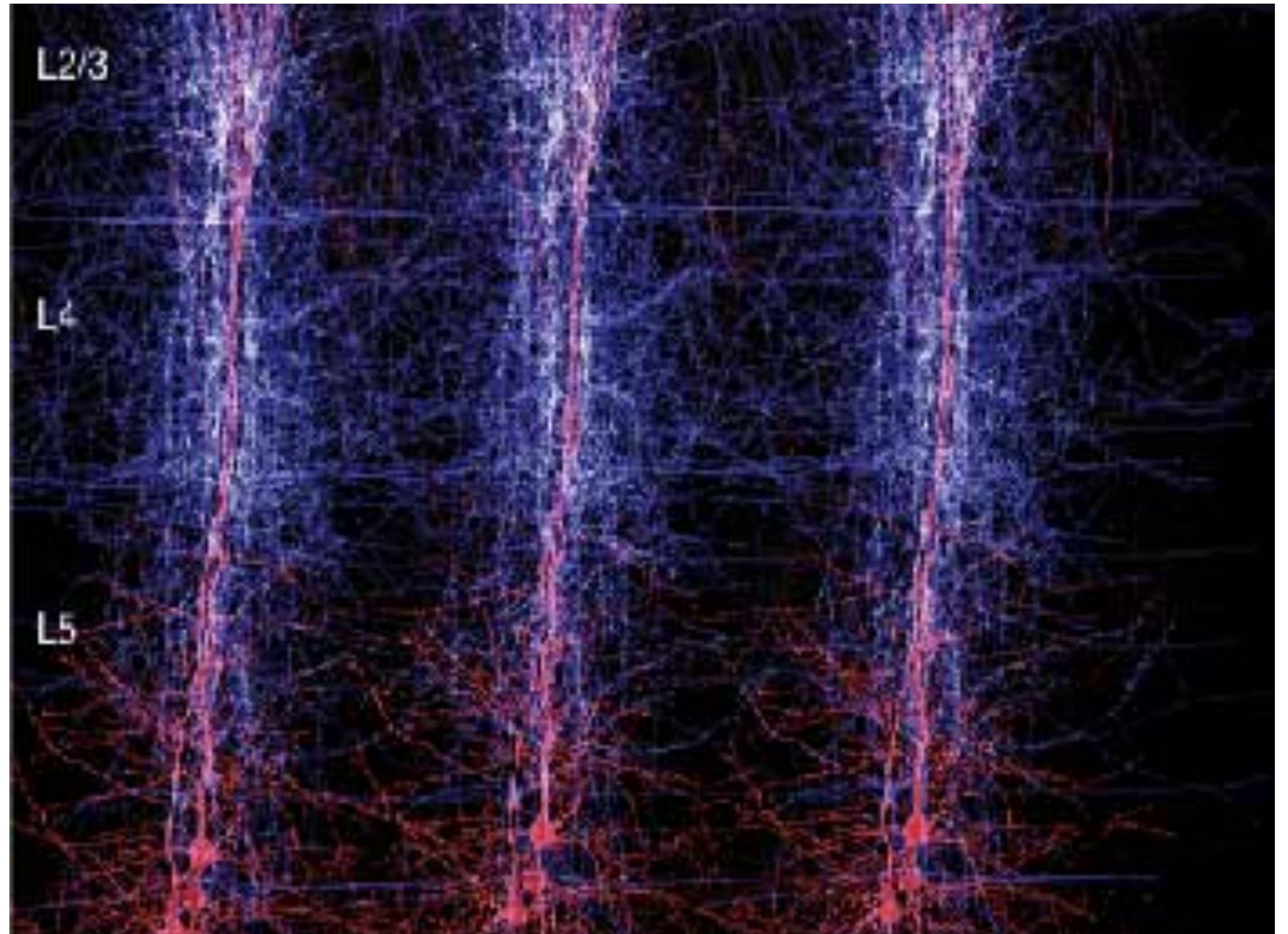


Life is the continuous
adjustment of internal
relations to external
relations...

Herbert Spencer



INTELLIGENCE



NEUROSCIENCE FUNDAMENTALS

Dr Melissa Casey

Outline: An Agile Enriched Environment

Encourage

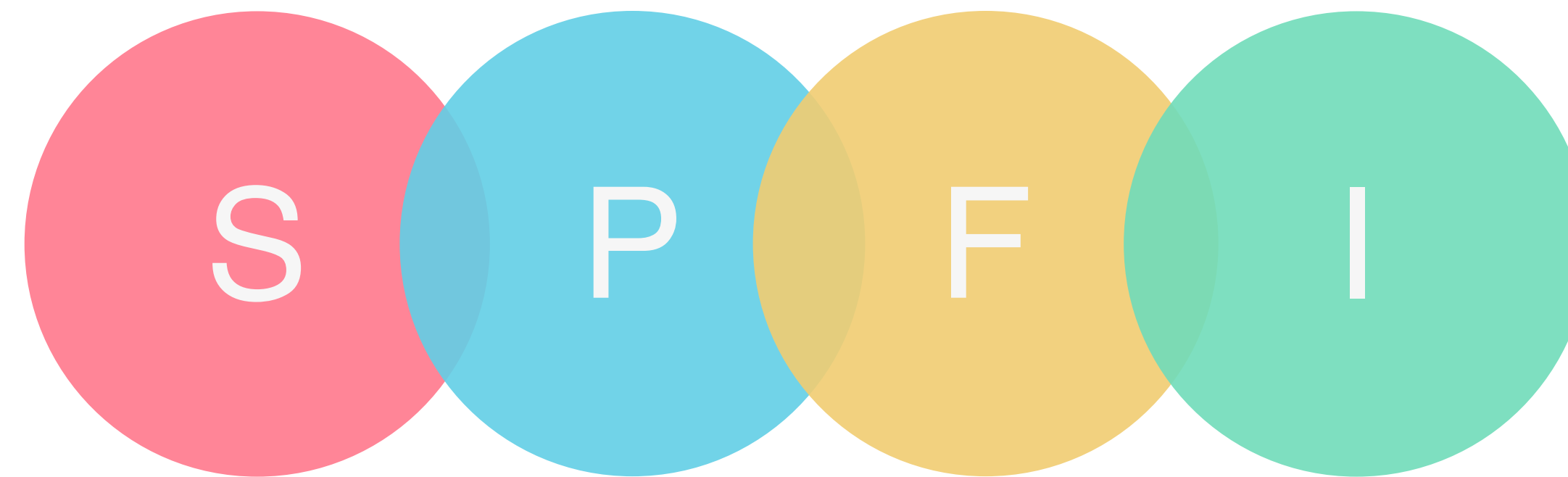
Inhibit

Social agility

Relationships
Empathy
Trust
Feedback
Experiments

Fear

Too much stress



Purpose and meaning

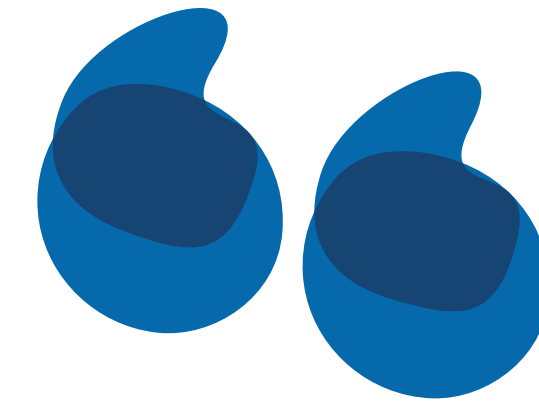
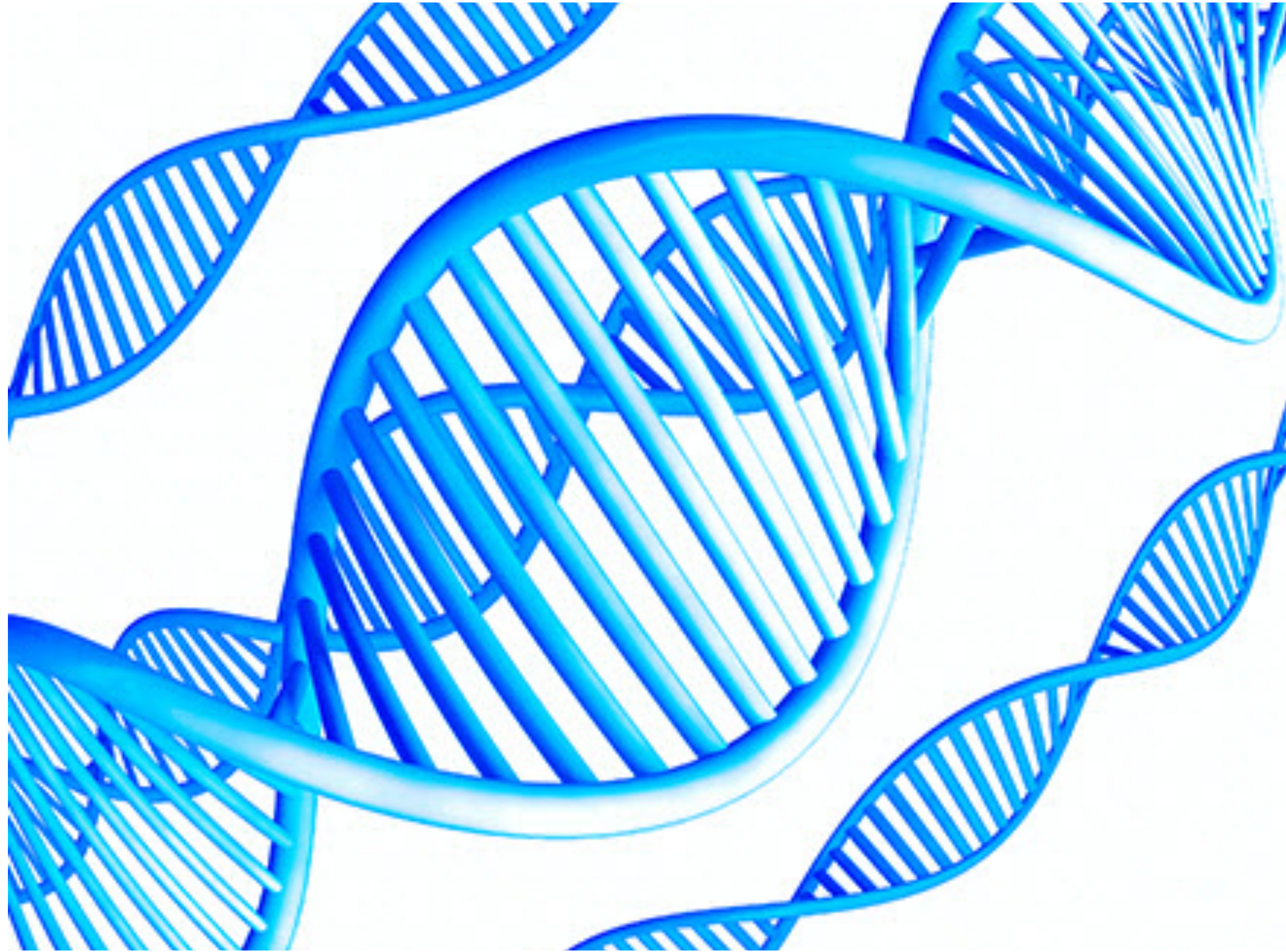
Linear, reductionist and a
reliance on over
intellectualised thinking

We are so much more than our thoughts

INHIBIT AGILITY

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FEAR



Fear is the the
oldest
and strongest
emotion of
mankind

H.P. Lovecraft



FEAR.....

**AND WHAT WE
REMEMBER**

The Cruellest Trick

When we are experience fear:

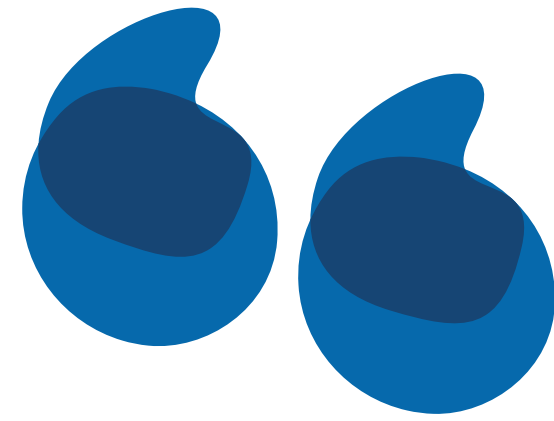
1. Our thinking is distorted or stops
2. What we pay attention to in our environment is distorted or stops

Therefore we don't *think/perceive things that are happening right around us!*

Photo (Vance A, Silk, T, Casey M, Cunnington R. (2007) Molecular Psychiatry 12: 793)
Text (Hayes et al., (2012) Frontiers in Integrative Neuroscience 6:89)

BUT

**OUR BODY
REMEMBERS...**



CLAPAREDE



The body remembers what we “forget”.

Hidden mental processes exert powerful influences on what we do...



**OUR BODY
REMEMBERS...**

**ROLE OF
EXPERIENCE**

EXPECTATION

**FABRIZIO
BENEDETTI**

PARKINSONS



The Journal of Physiology
24 FEB 2016 DOI: 10.1113/JP271322

<http://onlinelibrary.wiley.com/doi/10.1113/JP271322/full#tjp7104-fig-0001>

OUR BODY REMEMBERS...

**ROLE OF
EXPERIENCE**

**BODY V'S
THOUGHT
EXPECTATION**

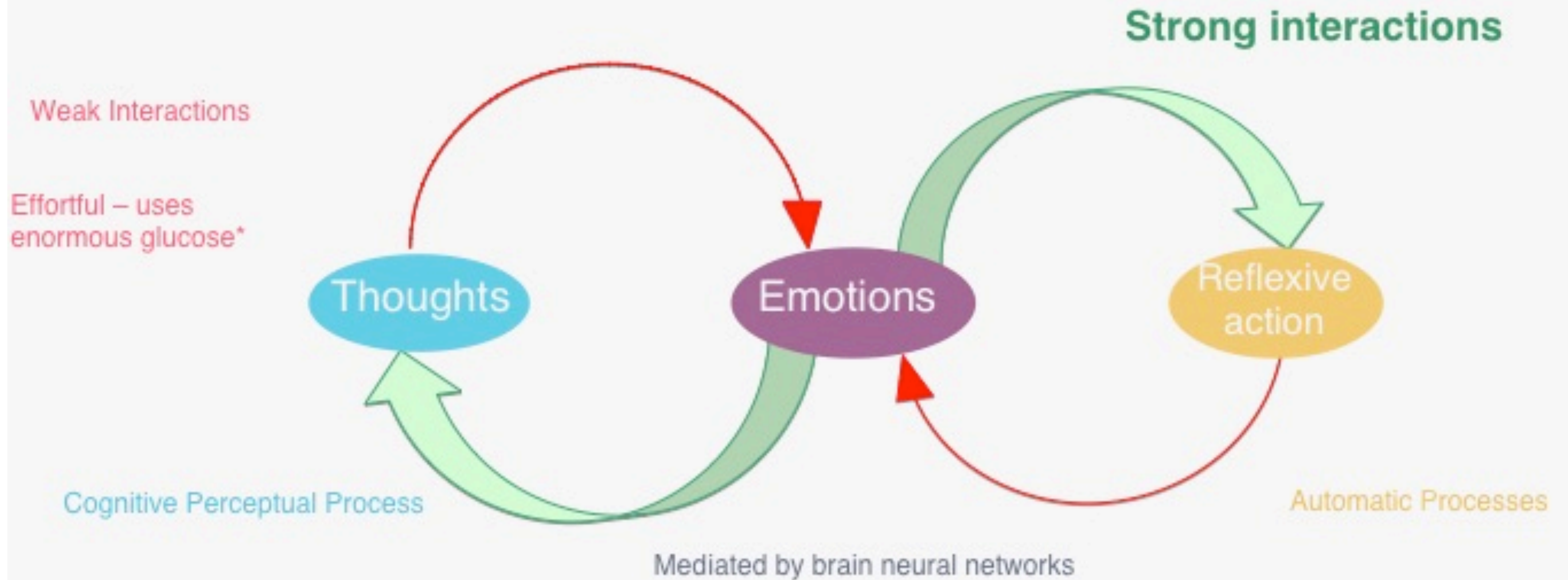


**FABRIZIO
BENEDETTI**

PARKINSONS

Emotions - the neurological powerhouse

Panksepp (1998) *Affective neuroscience* (Figure 3.2)



KAHNEMAN'S 2 MODES OF INFORMATION PROCESSING

SYSTEM 2

**CONTROLLED,
EFFORTFUL, ANALYTIC**



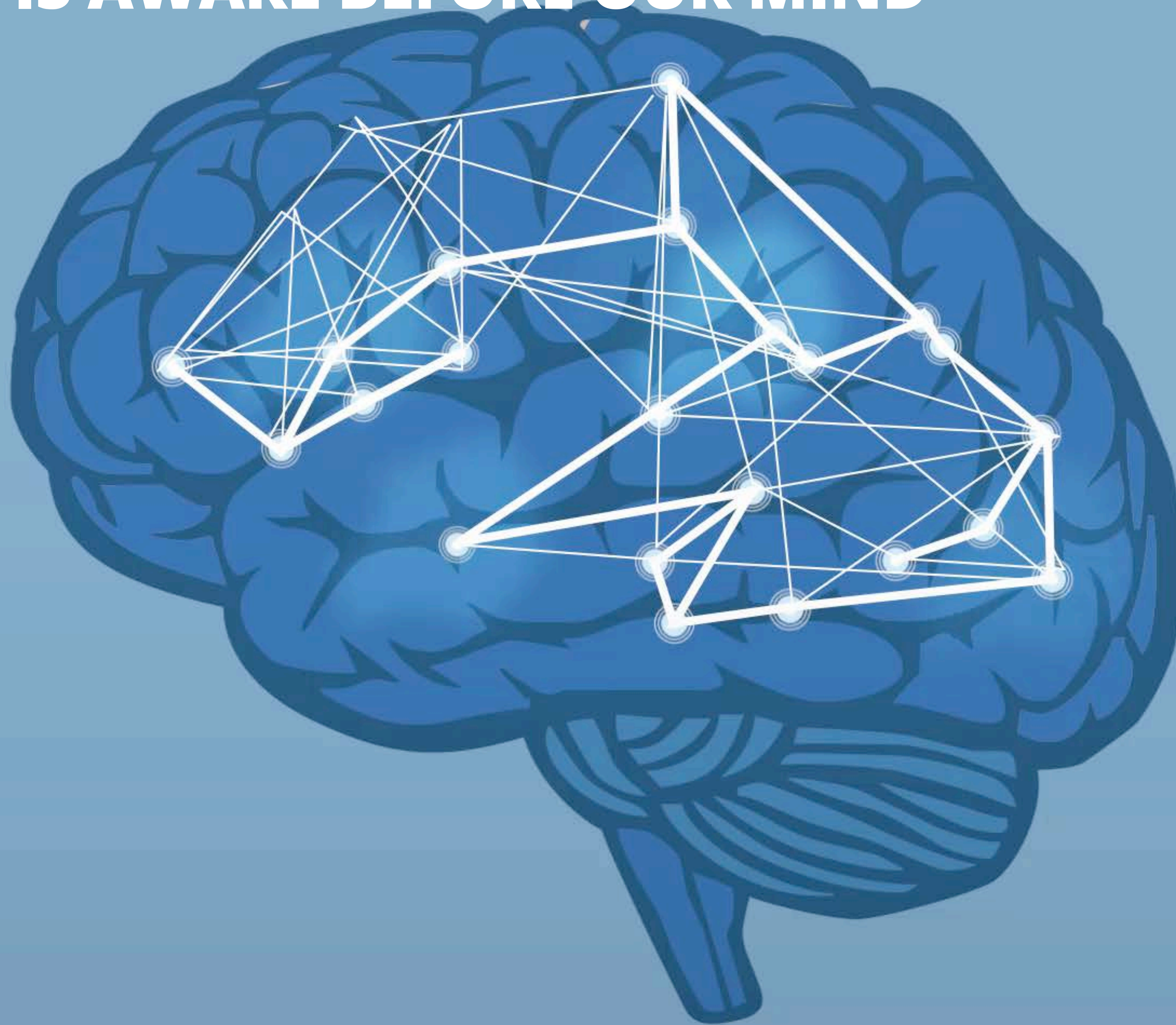
SYSTEM 1

**AUTOMATIC, INTUITIVE,
INSTANT, INVOLUNTARY,
MENTAL SHORTCUTS,**

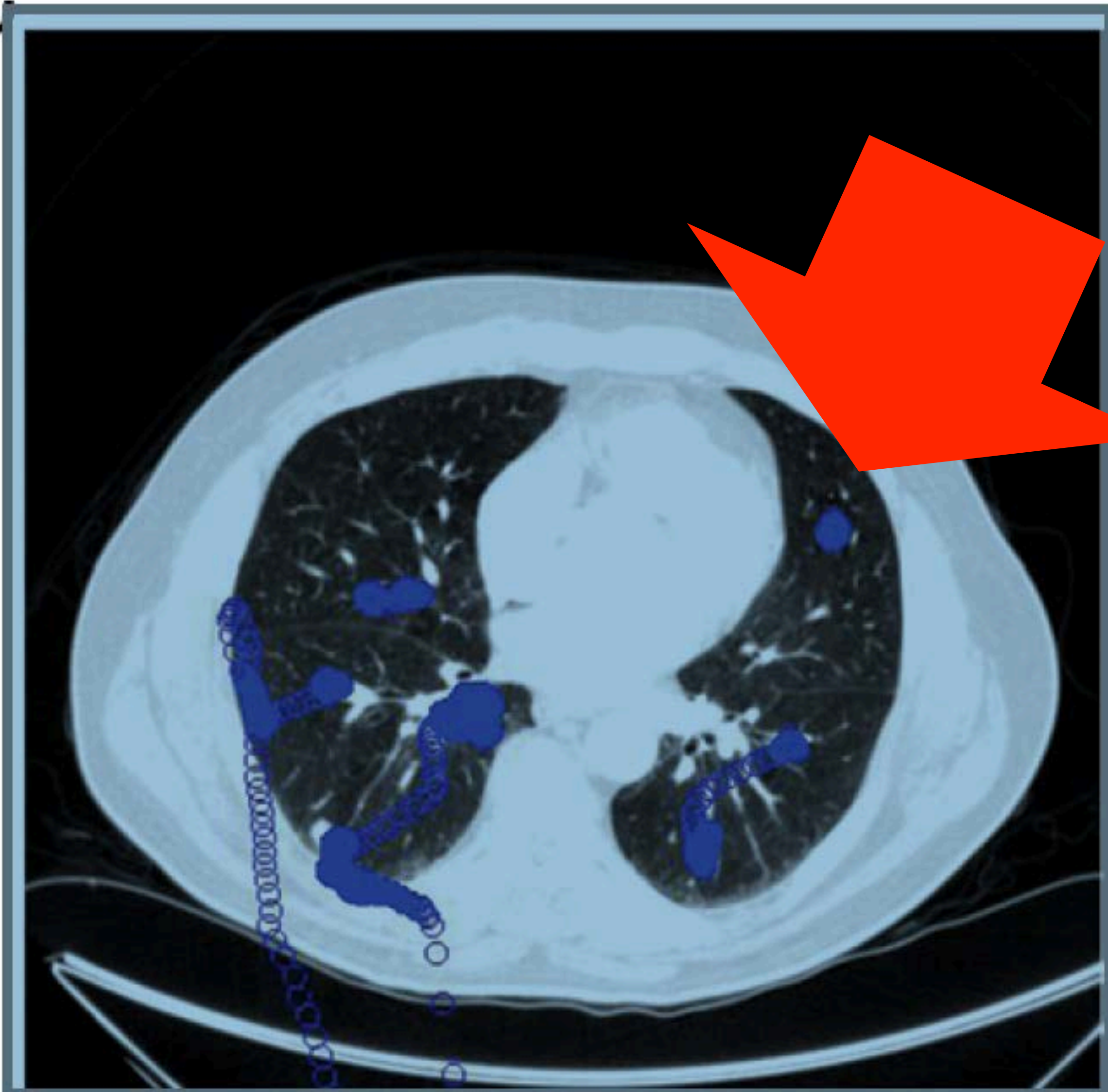
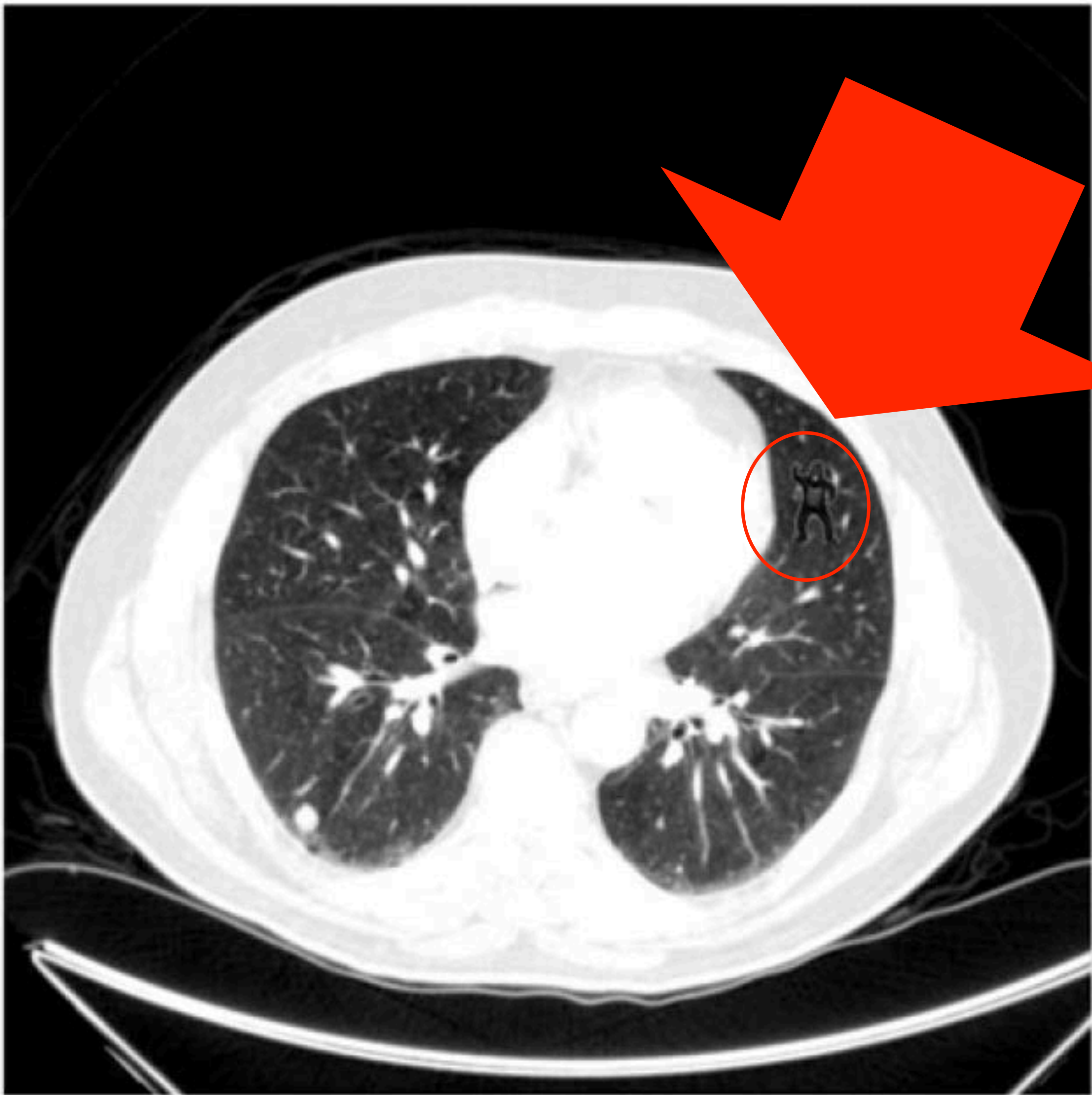
COGNITIVE HEURISTICS & BIAS.....



OUR BODY IS AWARE BEFORE OUR MIND



AN EXAMPLE: SUSTAINED INATTENTIONAL BLINDNESS



ENCOURAGE AGILITY: SOCIAL AGILITY

Dr Melissa Casey

RELATIONSHIPS

Dr Melissa Casey

RELATIONSHIPS: NOT ALL THAT INFLUENCES WHAT WE DO IS CONSCIOUS



The mind is like an iceberg, it floats with one-seventh of its bulk above water
Sigmund Freud



All these things influence how we learn and change

RELATIONSHIPS & FEEDBACK

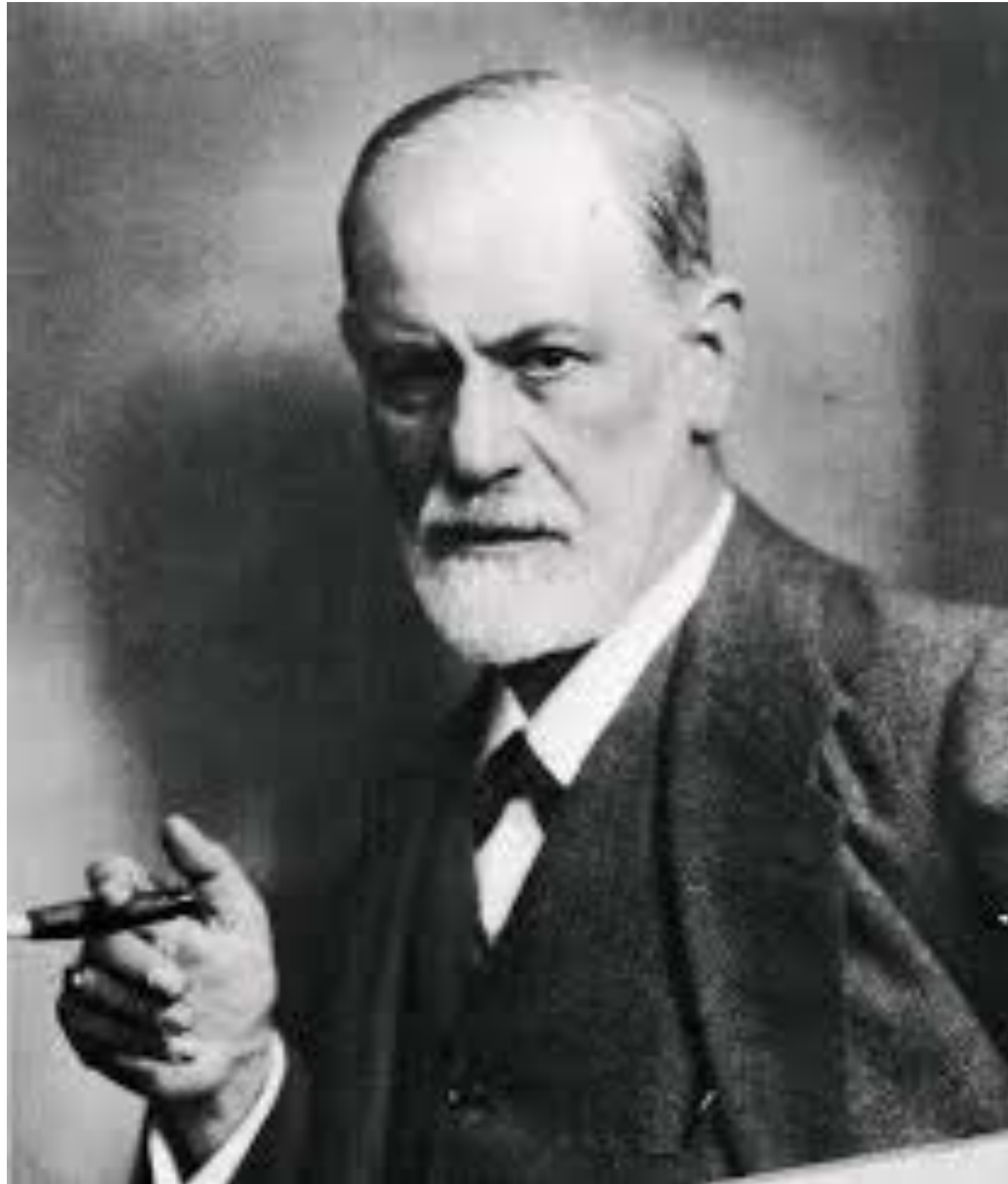


Over 1,000 research findings demonstrate positive alliance is best predictor of outcome



Duncan, B. L., Miller, S. D., Sparks, J. A., Claud, D. A., Reynolds, L. R., Brown, J., & Johnson, L. D. (2003). The Session Rating Scale: Preliminary psychometric properties of a "working" alliance measure. *Journal of brief Therapy*, 3(1), 3-12

WHY IS A RELATIONSHIP IMPORTANT AT WORK: FEEDBACK



Freud – pact between people

Bordin (1979) – negotiated and dyadic, agreement on goals and tasks, emotional bond

Meissner (2006) psychodynamic - working alliance, transference and real relationship

Martin (2000) collaborative and affective bond

TRUST: WE THINK WE ARE MORE RATIONAL THAN WE ARE...

*Developed through
stable frequent
interactions with
others*

*Measure = frequency
of interactions*



Purpose



1,000 studies
Analysed 3,000
pages of transcript,
interviews with
successful **leaders**

George (2007) HBR

Did not identify any universal characteristics, traits, skills, or styles that led to their success

Do not have to be born with specific characteristics or traits to be a leader

✓ Successful leaders discovered the purpose of their leadership and learned that being authentic made them more effective

Their leadership magic emerged from their life stories

Purpose

Frankl's Mantra



- ▶ **“He who has a why to live can bear with almost any how.”**
– Friedrich Nietzsche

WHAT IS EMPATHY?

OUR BIOLOGY

MIRROR NEURONS

GALLESE 2001

**LACOBONI,
1999**

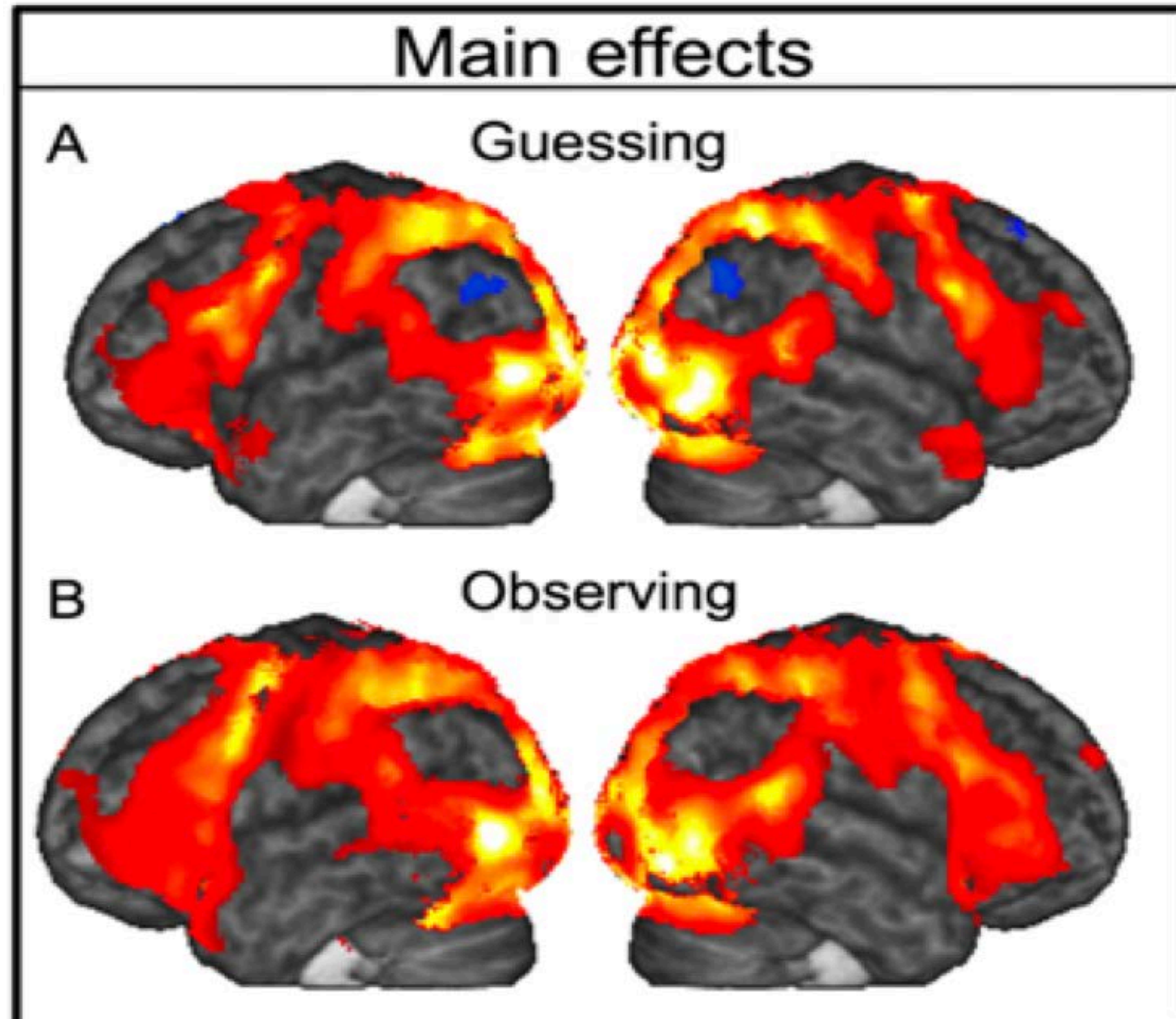


MIRROR NEURONS

AS IF...

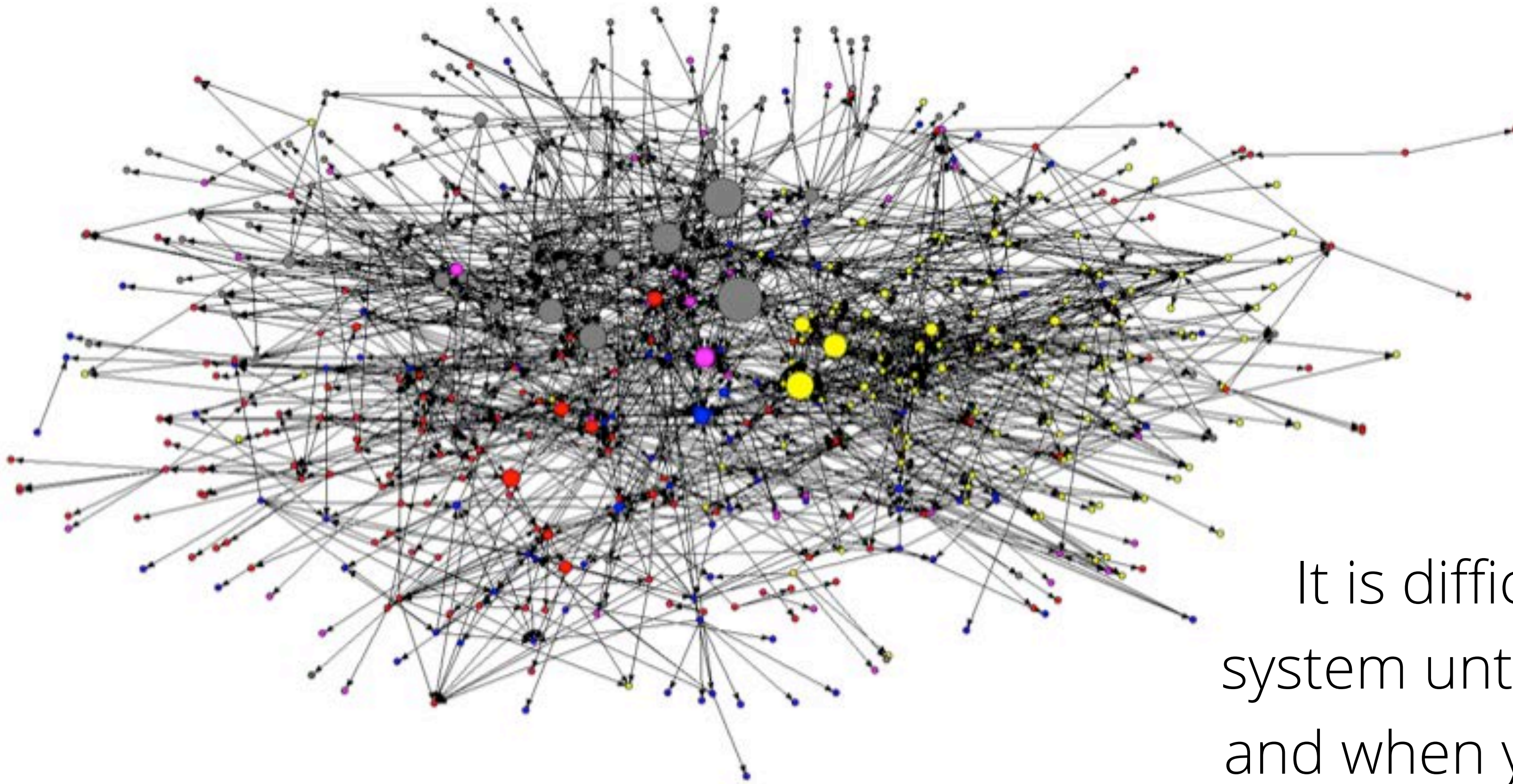
SCHIPPER ET AL, 2009

MIRROR NEURONS, THE NEURAL TRANSPORTERS OF CULTURE...



THE CHALLENGES IN ORGANISATIONS

ORGANISATIONS ARE SOCIAL NETWORKS



It is difficult to understand a system until you try and change it and when you do try to change it, only then will underlying mechanisms maintaining the status quo emerge (Schein, 2005).

TOOLKIT

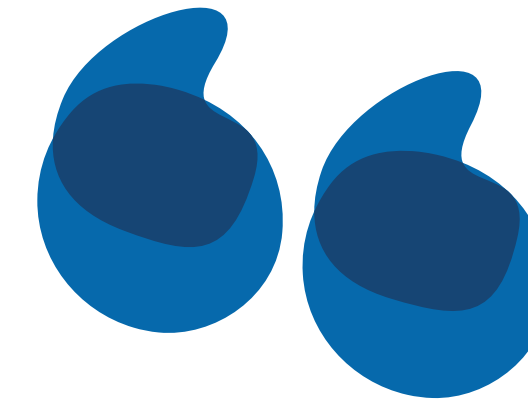
Dr Melissa Casey



All these things influence how we learn and change

Agile Values¹

1. PEOPLE OVER PROCESSES AND TOOLS
2. RESPOND TO CHANGE RATHER THAN FOLLOW A PLAN
3. WORKING PROTOTYPES OVER EXCESSIVE DOCUMENTATION
4. CUSTOMER COLLABORATION OVER RIGID CONTRACTS

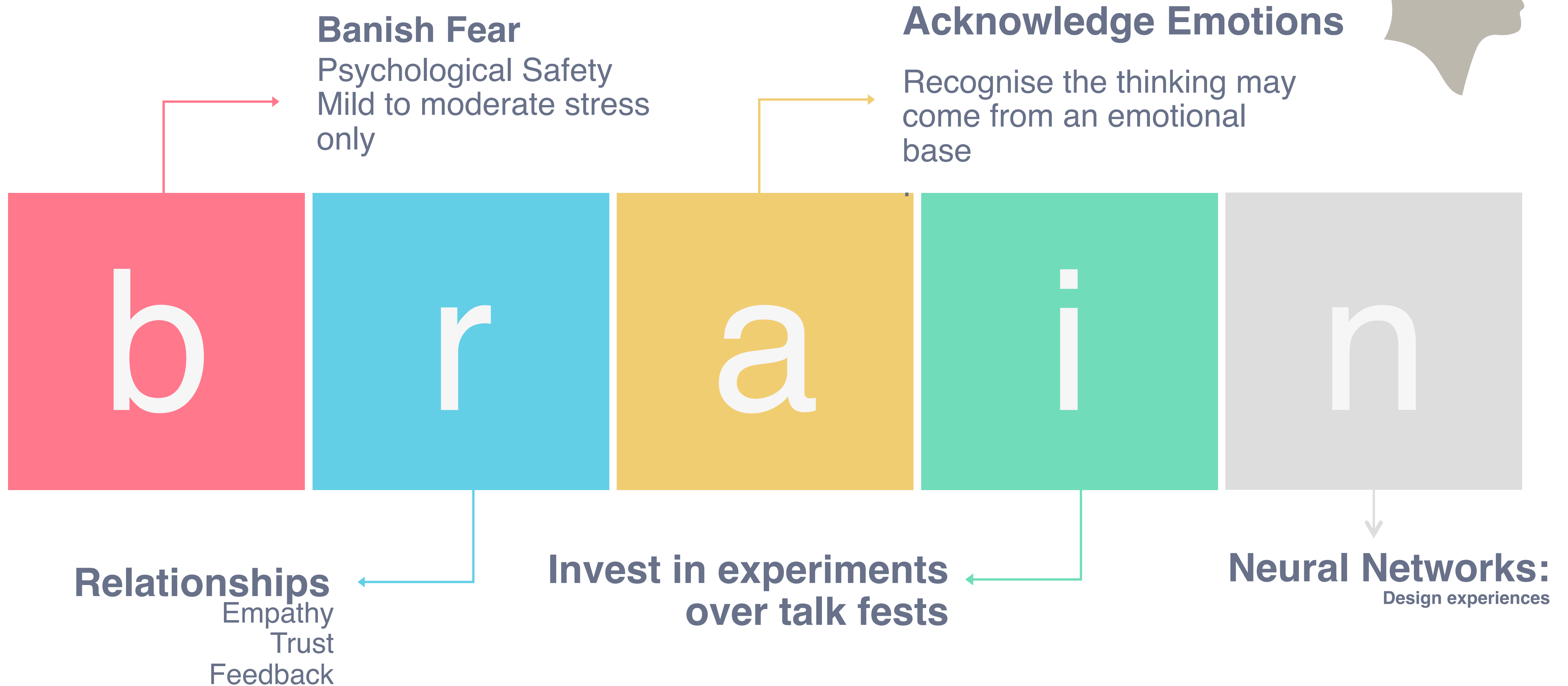


Team members should resolve arguments with experiments rather than endless debates or appeals to authority...



¹Rigby, Sutherland & Takeuchi. (HBR, May 2016)

Agile Culture Toolkit



DOES IT WORK ?

Dr Melissa Casey
Melissa.casey1@monashhealth.org

We are agile clinical teams



THREE TAKE AWAYS

Create an enriched agile environment

We are more than our thoughts...

As leaders, the environment we create, determines whether we get the best version of our people (or not)

Dr Melissa Casey

Melissa.casey1@monashhealth.org