



# I Second That Emotion

Presentation to PFSG conference:

*Fast Forward*

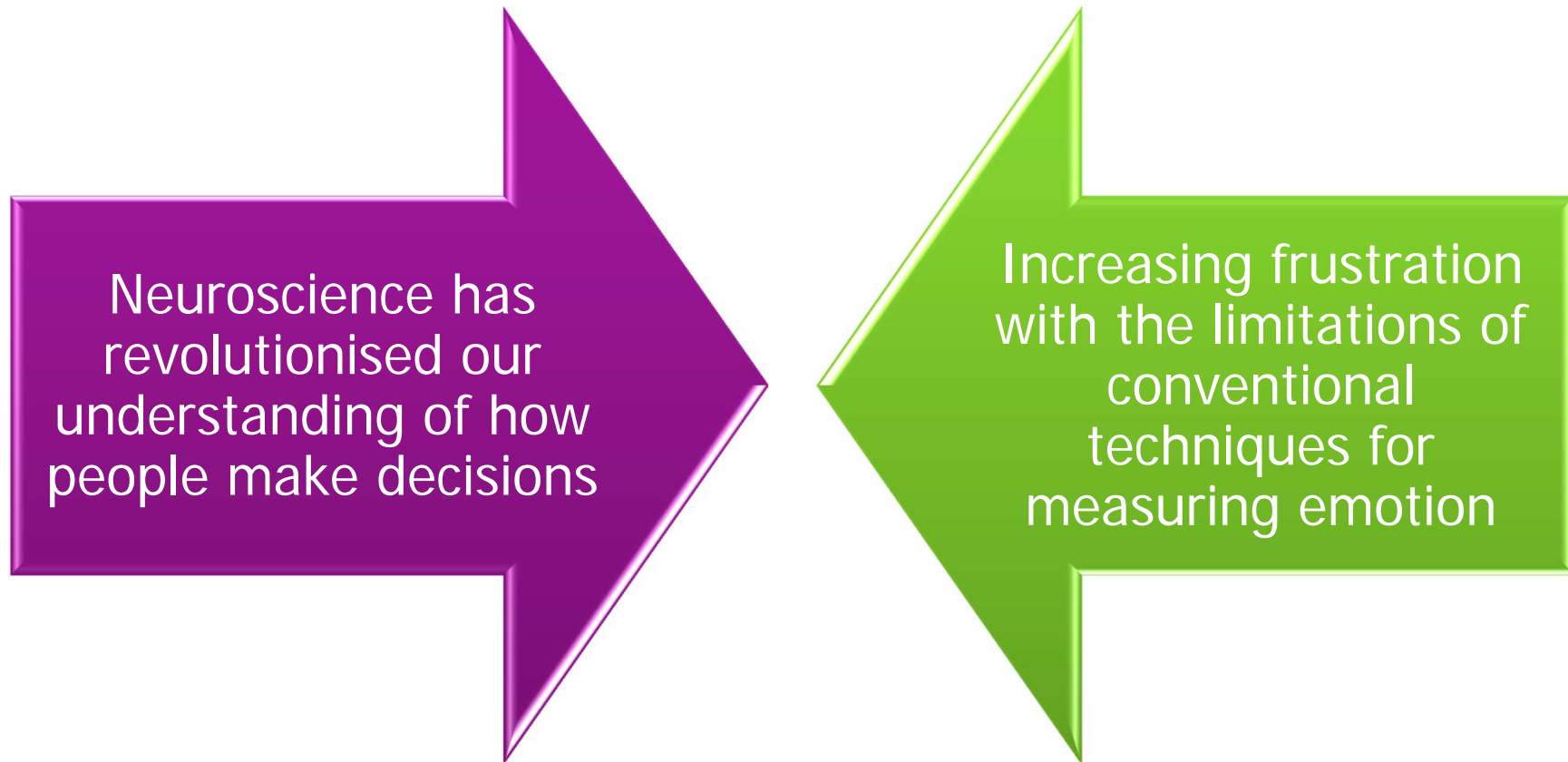
David Penn, Managing Director, Conquest

Twitter @davidpenn1

# What I'm going to talk about

- Why Emotion is so important
- Why conventional MR is not very good at measuring it
- Why neuromarketing is not the (full) answer
- Why we need to look for new solutions

# Why the interest in emotion?



“My dad always told me you’ve got to dig it, grow it or build it, the rest is just fluff”.

# Stuff vs. Fluff

## Stuff



## Fluff



# Stuff vs. Fluff

## Stuff

**Physical  
measurement**

## Fluff

**Feelings**

**Emotions**

**Conceptualisation**

# Stuff vs. Fluff

**Stuff**



**Fluff**



# What does Cognitive Neuroscience tell us?





**“They’re made of meat!”**

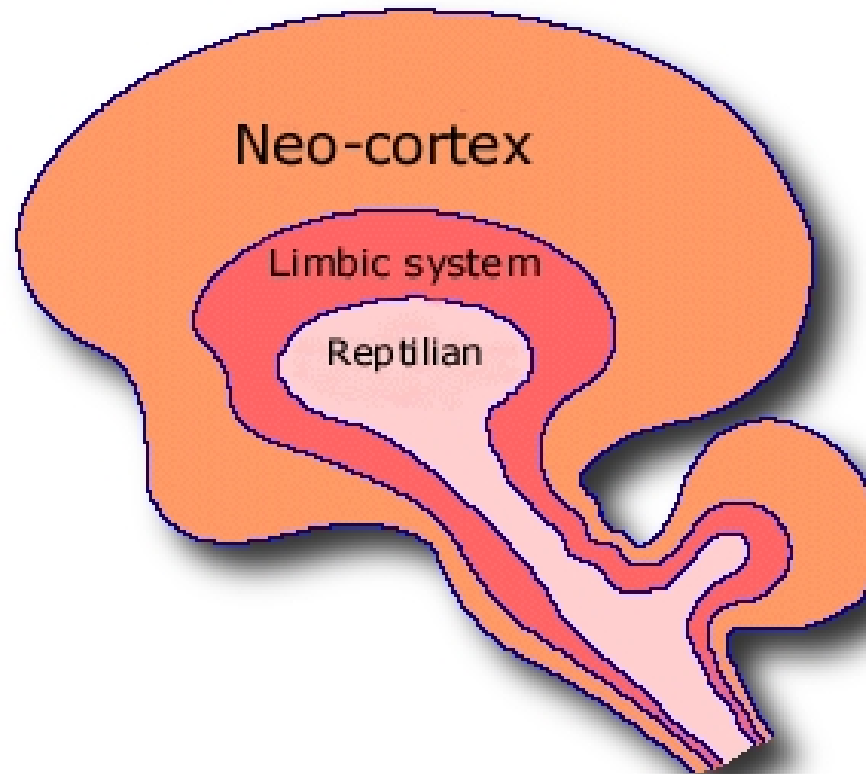


**“Meat?! So what does the thinking?”**

Reptilian - Survival

Limbic - Emotional

Neo-cortex - Abstract



# The impact of neuroscience

- **Neuroscience** shows that conscious decisions seem to be based on emotional rather than rational cues, or triggered subconsciously:
  - a large proportion of human motivations thus lie below the level of consciousness
  - emotions cannot be measured adequately via self-report verbal indicators
- Modern (cognitive) psychology tells us that some decisions are made intuitively, automatically and without any conscious control or effort.
- Marketers now seek new ways to explore preconscious, non-verbal stages of information processing

# Our conscious mind is only the tip of the iceberg



Conscious, rational, verbal (system 1)

Unconscious, emotional, non-verbal (system 2)

# From System 2 to System 1....

***FROM...***

***TO***

We weigh up the benefits of the options on offer, choosing the best.

We are not in control of, or even aware of, most of our thinking,

We can **explain** our behaviour, our thinking and our emotions.

We have a vast and automatically operating unconscious mind, but we have no direct conscious access to it.

“

Whenever emotions conflict with thinking, emotion wins.

We are about as effective at stopping an emotion as stopping a sneeze.

- **Antonio Damasio**

”

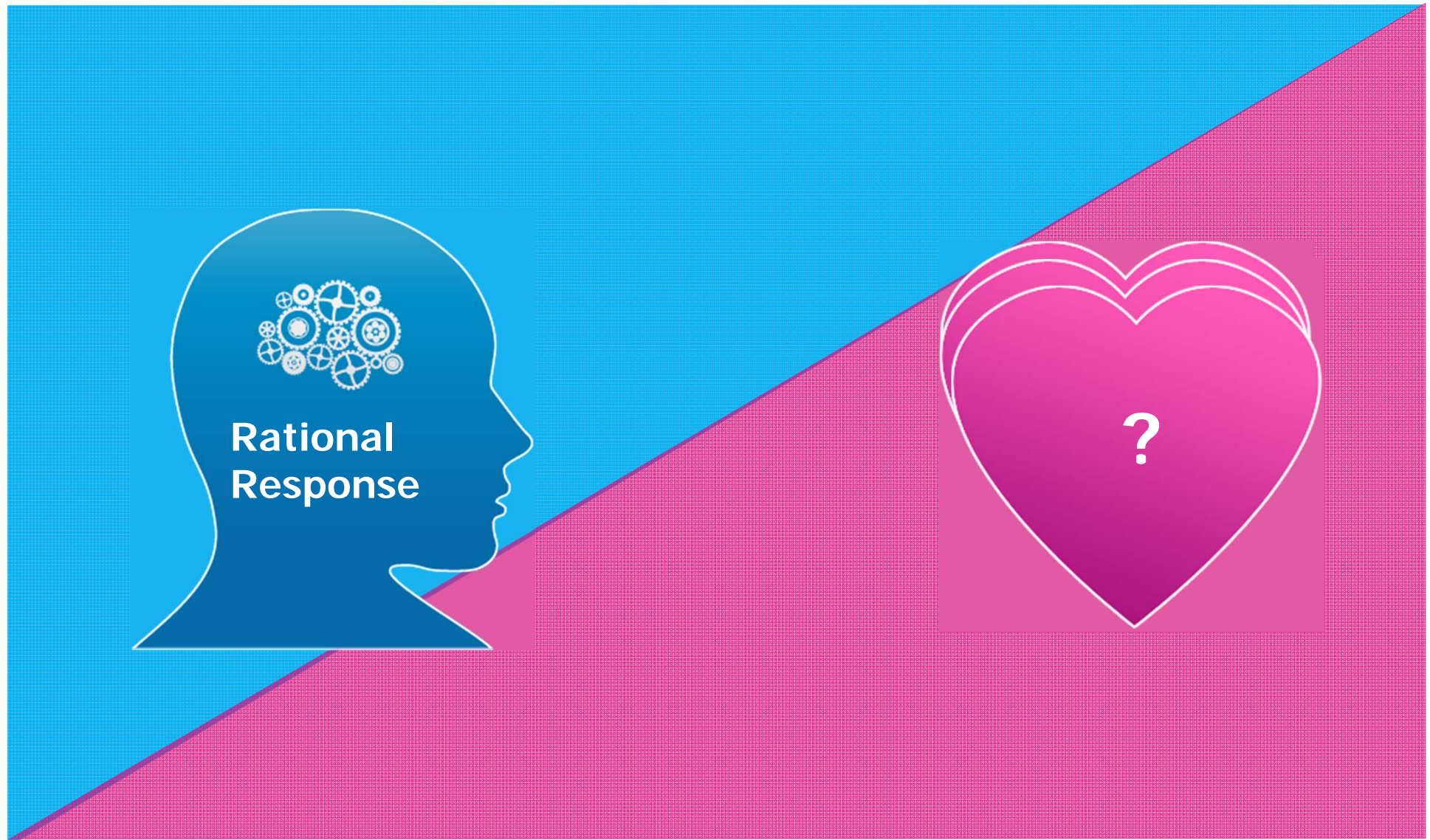
“

Emotion leads to action, while reason leads to conclusions.

- **Donald Calne**

”

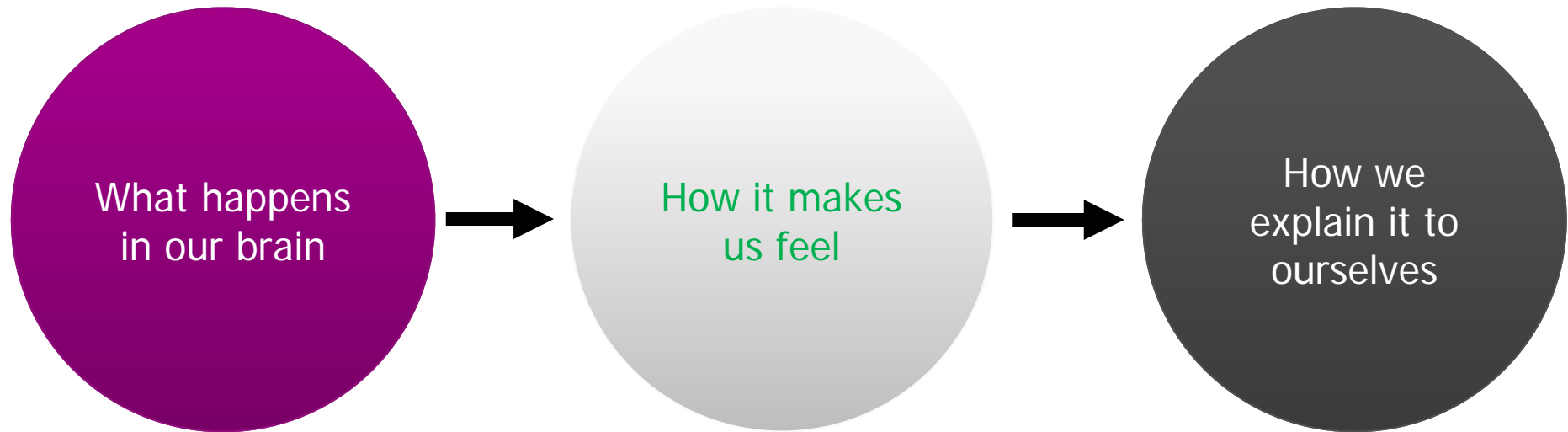
# Conventional research measures the head but not the heart



*Emotion*

*Feelings*

*Rationalisation*





## The Key Problem of Conventional MR

**The more we think and consider, the further we get from our emotions**

“

**Emotion without cognitive appraisal is really just arousal**

**Mast and Zaltman**

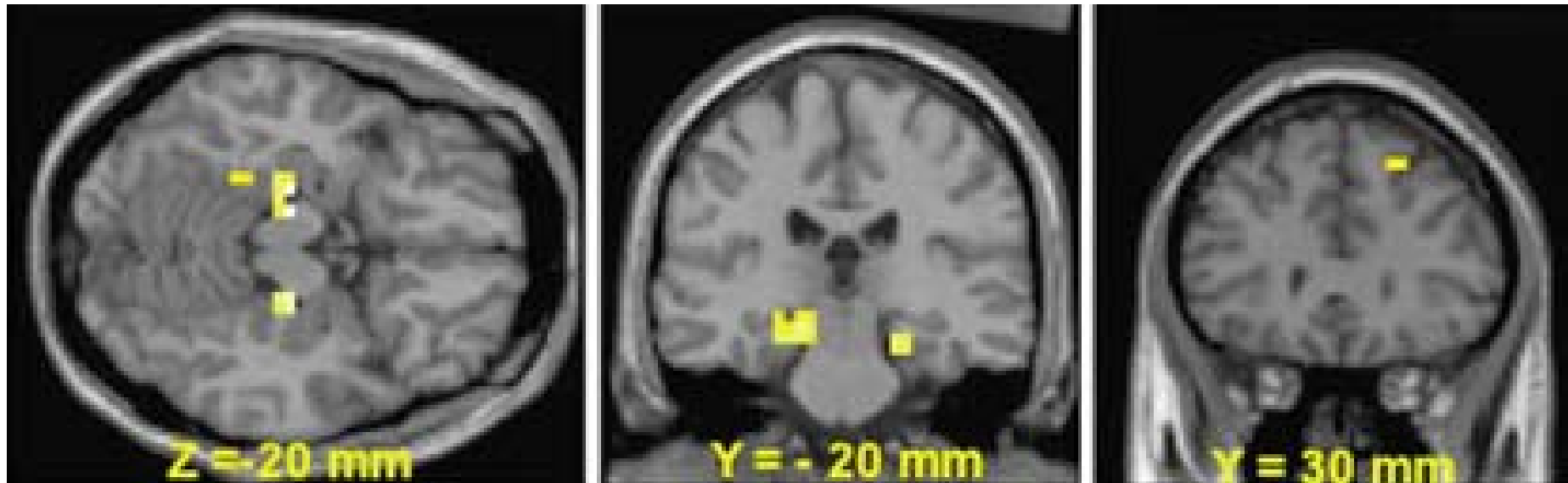
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**Question:** *How can we understand emotion without asking people how they feel?*

Which is where **neuromarketing** comes in. . .



Now we can ...

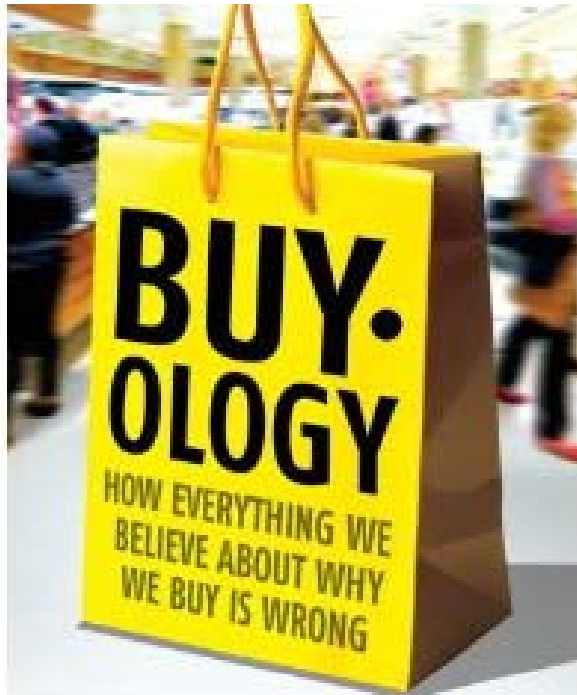


And we discover that consumers do not always tell us the truth about why they buy brands

# Neuromarketing

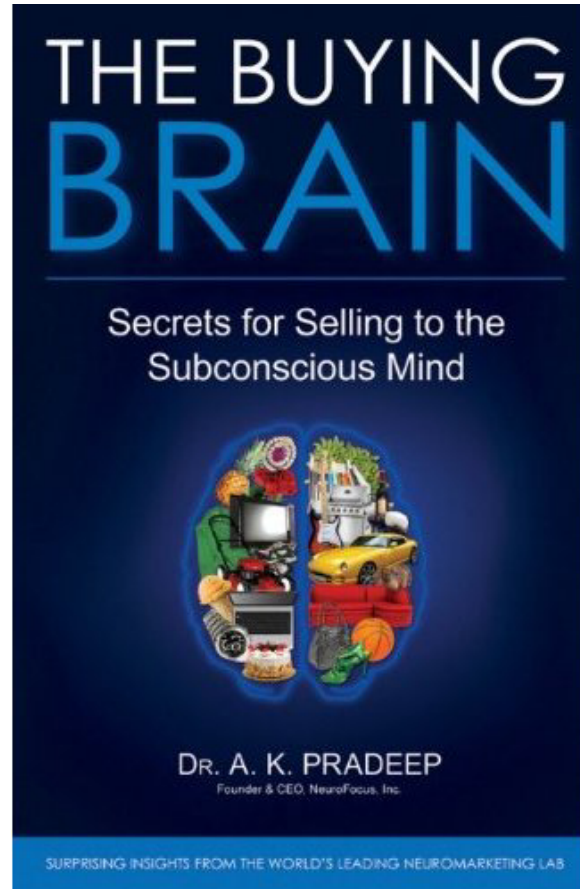
- Ethics
- Practicality
- Hype





**Martin Lindstrom**

'BE PREPARED TO HAVE YOUR CHERISHED BELIEFS OVERTURNED' **SPECTATOR**



# Is Neuroscience the same as Neuromarketing?

## ***Cognitive Neuroscience***

The study of  
how our  
thoughts and  
feelings are  
implemented  
into the brain

## ***Neuromarketing Neurometrics***

The use of  
neuroscientific  
technologies to  
measure  
response to  
marketing  
stimuli



# Not all 'neuromarketing' is based on neuroscience



Brain Scanning  
fMRI/PET)



Brainwave (EEG)



Autonomic arousal



Eye Tracking



Facial coding



Implicit association  
New MR methods



Neuroscience

Physiology

Cognitive  
Psychology

*All Indirect* measurements

# The Birth of Neuromarketing

- In 2003, neuroscientists in US found that in a **blind product test** of Coke/Pepsi only those parts of the brain relating to sensory judgement were active.
- But when respondents were **told** what they were drinking, preference switched in Coke's favour, and parts of the brain associated with emotional response became active.
- Brain imaging (fMRI) showed that **Coke branding activated areas of the brain associated with emotional judgement**, whilst knowledge of Pepsi had no corresponding effect.

“

A brain scan is a fast acting  
solvent of critical faculties

**Matthew B Crawford**

”



## Why isn't fMRI used more widely?

- It's the only neuromarketing technique with **sufficiently high spatial resolution** to locate activity in specific brain regions
- BUT. . . Hugely expensive (non-portable) equipment
- Poor **temporal resolution** – Can take 5 secs for added blood supply to reach activated/ affected part of the brain
- Claustrophobic and stressful respondent experience

# What about Biometrics?

- **Eye tracking** is supported by 'strong eye hypothesis' which says that a person cognitively processes info at the same time as **their visual attention** is fixed on that object.
- **Skin conductance** can measure the **degree of arousal** created by a stimulus
- **Facial EMG** measures **facial muscle movements** which may reflect conscious or unconscious expression of emotion
- **Question:** Can these techniques tell us the **emotional valence** (meaning) of the response?

## Issues with Biometrics

- No full agreement about the impact of **emotional valence** on visual attention. Most evidence shows that **both negative and positive** stimuli capture attention.
- **Pupil dilation** alone is not a good indicator of affective states
- **Skin conductance** cannot determine the **direction or valence of emotional reaction** but merely measures degree of arousal

Can we determine emotional valence using other approaches?



# EEG - Electroencephalography

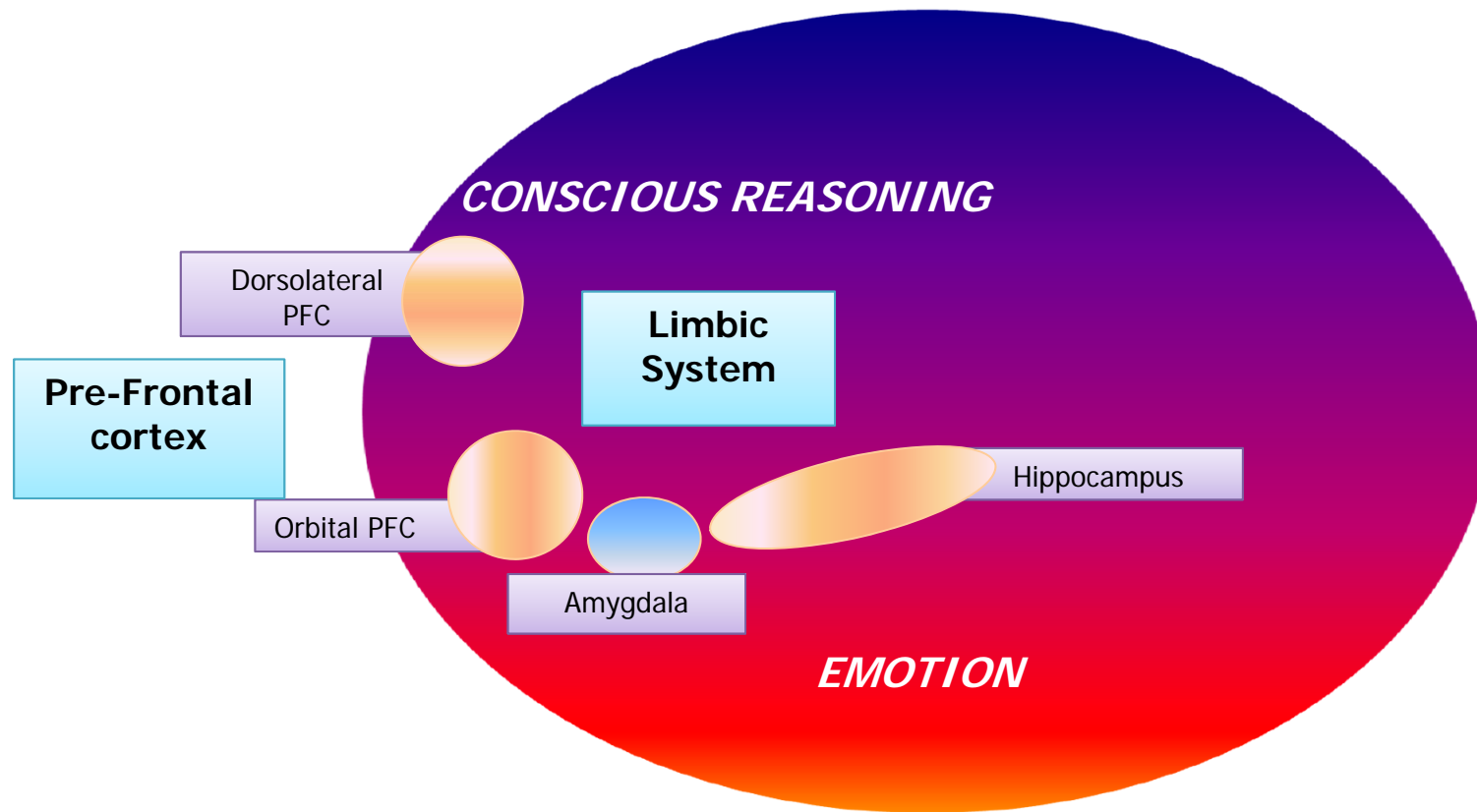
- EEG relies on a model that the left Prefrontal Cortex (PFC) is involved in **approach behaviour** whereas right PFC is involved in **withdrawal** from aversive stimuli.
- Evidence is compelling, but not completely conclusive because **anger**, which is an approach but a negatively valenced emotion, **cannot be separated** from happiness

## Why EEG must be treated with caution

- **Dorsolateral PFC** is most associated with **cognitive control**...This sector is **most directly reflected** in EEG recordings
- **Orbital PFC** is most associated with **emotional value**....Yet this is the sector **least likely** to be recorded by EEG



# Emotions and reasoning sit side by side in our brains



*" One unwitting consequence of my work ...is the view that the PFC is the primary region for emotion/motivation... (Yet) the prefrontal sector most directly associated with emotion is the **orbital PFC** - which is the sector **least likely** to be recorded by EEG. "*

Davidson 2004

## Should we be neuromantics or neurosceptics?

*"Marketers are not interested in science or complexity...they want simplicity – an easy to understand, single number solution...There is a temptation to over-simplify and over-claim."*

Max Sutherland, psychologist and marketing consultant

*"I compare advertisers to Christopher Columbus gripping a simple map of the earth he believed to be flat. Thanks to (neuromarketing) we're now able to see an almost Aristotelian shift in thinking; companies are beginning to realise that the world, in fact, is round."*

Martin Lindstrom, Buy.OLOGY

# Neuromantic

- Verbal responses about emotion are unreliable
- Respondents post-rationalise
- Too much goes on unconsciously to rely on conscious response
- We cannot see into our own brains
- Neuromarketing tells us what we can't know through other means

# Neuroscientific

- Difficult to *locate* specific emotions in the brain – except, perhaps, via fMRI
- Most neuromarketing techniques give either a partial (EEG) or secondary/ time-lagged reading like bio-metrics
- We can *observe* a brain response (arousal) but that doesn't tell us about its valence or how it *feels*

# Neuromarketing raises some fundamental questions

- Is the science only good enough for experimentation rather than commercial application?
- Are there other less expensive and invasive ways of measuring emotion without direct questioning?

*"In neuromarketing there is no  $E = MC^2$  equation"*

Richard Thorogood, Director of Strategic Insights & Analytics, Colgate-Palmolive US Company

# New approaches to MR

APPROACH	SOURCE	RATIONALE	APPLICATION
Facial Coding	Social Psychology (Ekman)	Facial expressions link to emotion and are universal	<ol style="list-style-type: none"> <li>1. Decoding of facial expressions</li> <li>2. Proxies of facial expressions</li> </ol>
Implicit Association Tests	Social Psychology	We're influenced by stuff in our implicit memory that we are not consciously aware of	Measures of speed of association – often with primed stimuli

# Facial Coding

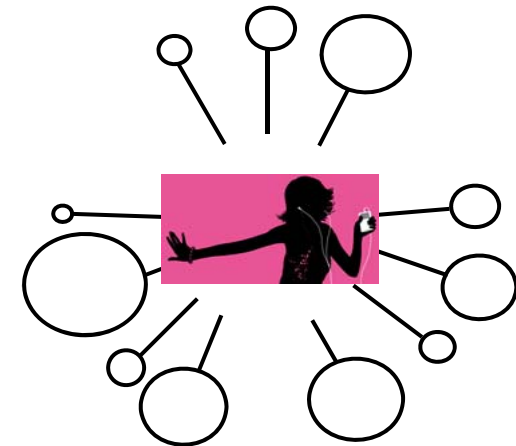
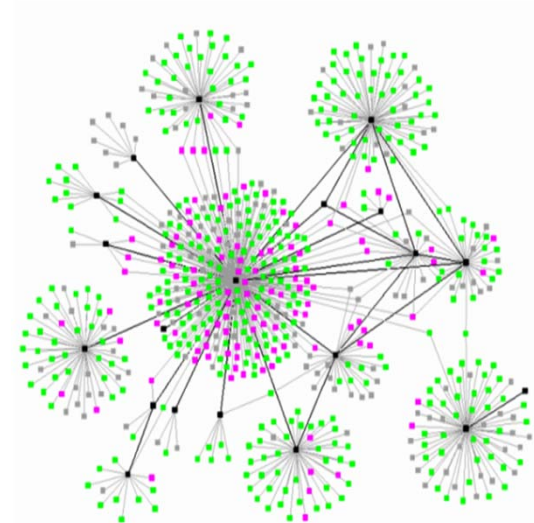


- Recording and analysis of spontaneous facial expressions to understand fleeting reactions, e.g.
  - Anger, fear, sadness, disgust, surprise, happiness etc
- Pros
  - ✓ Well established academic foundation
  - ✓ Variety of expressions do seem to be universal, so allows measurement of unreported feelings or reactions that are too fast to express, bypassing need for introspection
- Cons
  - ✗ Manual coding requires training and takes time
  - ✗ Automated app progressing but still developing
  - ✗ Limited number of mental states can be coded – primarily negative rather than positive



# Implicit Associations

- Well established methods from cognitive psychology, to assess automatic associations with a stimulus
  - Semantic Priming effects indicate ideas associated with the item
  - Affective Priming indicates emotional reactions to the item
- Primarily verbal, but methods use reaction time or task accuracy to avoid need to ask direct questions
  - Any stimulus automatically activates a network of associated ideas.
  - Automatic emotional reactions facilitate or interfere with processing of emotional ideas



# Implicit associations – pros and cons

## Pros

- Suited to investigation of sensitive topics or deeper motivations
- Quantitative investigation of issues usually explored only in qual
- Can be administered easily in online surveys
- Flexible – can be applied to a wide variety of marketing issues

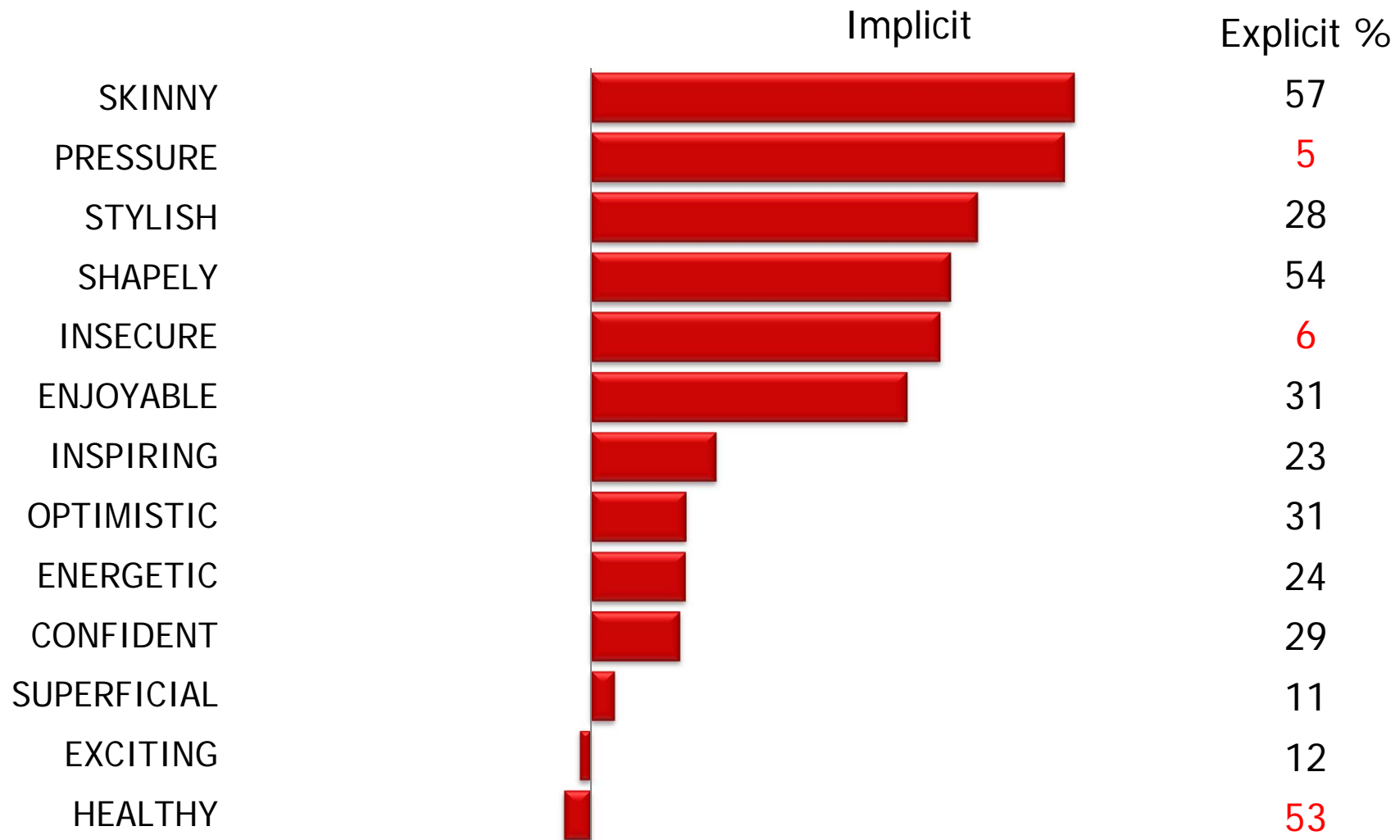


## Cons

- Methods aren't intuitive for lay-people
- Reveals what and how people react, not why
- Can be repetitive and sample-intensive
- Effects are fragile if not administered correctly



# Implicit associations reveal people's deeper motivations





# We had emotions before we had language



“

By engaging the language of visual imagery, we enable a richer description of our inner feelings.

- **Gerald Zaltman**

”



# We communicated long before we had language



Episodic memory

Mimesis (sign/mime)

Non-verbal representation

Metaphor

Symbols/Language

APPROACH	SOURCE	RATIONALE	APPLICATION
Metaphor Analysis	Cognitive Linguistics	Metaphors are (universal) thought constructs which underpin language and which link directly to emotions	<p>Quantitatively - via visualised metaphoric scales.</p> <p>Qualitatively - via deconstruction of images</p>
Cultural Analysis	Semir Zeki “Spendours and Miseries of the Brain”	Language/art/literature are brain outputs and can be deconstructed to understand underlying brain concepts	



# Primary Metaphors allow people to express their feelings intuitively

I have a very *warm* relationship with her

I feel *close* to him

I *jumped* for joy

**Metaphor**

**Affection**

**Intimacy**

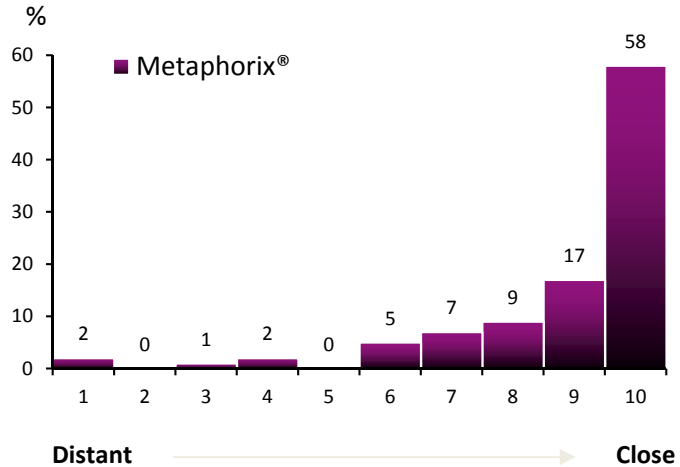
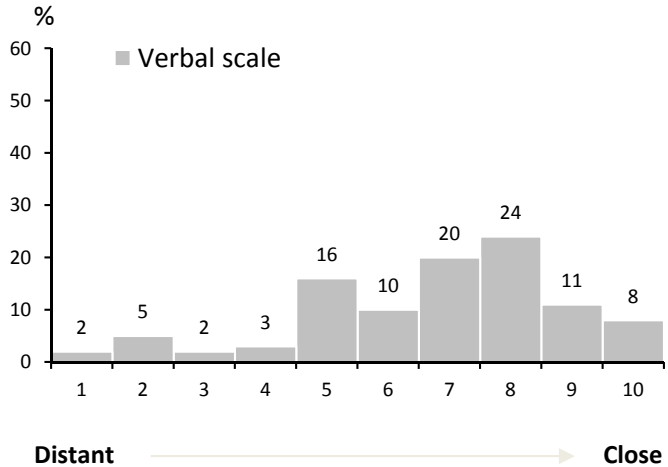
**Excitement**

**Emotion**

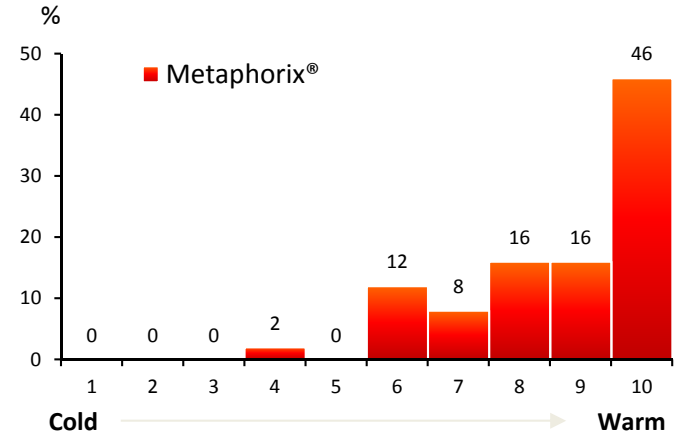
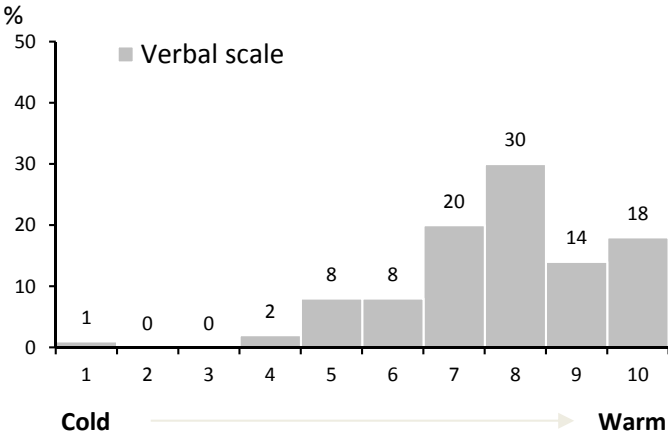
[www.metaphorixuk.com](http://www.metaphorixuk.com)

# Metaphorix<sup>®</sup> reveals intensity of response

## Proximity



## Warmth





# Questions to ask of new methods

Do the techniques yield meaningful results?



Do they deliver incremental insights?



Are they practical?



Are they better predictors of behaviour?



Thank you



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