Walnut Unlimited. Powered by the Unlimited Group

Human Insights.
Learnings from neuroscience.

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WALNUT

The human understanding agency.

We help brands reconnect with people, by understanding people. Interpreting human behaviour is a science, and an art. Knowing why people do what they do, what motivates, and doesn't. Exploring how we feel about the world around us, and where we're going next. Peeling back the layers of the thought process to grasp and focus on the complex truth inside. Because understanding gives instant access to the modern mind, and the human heart.

The human understanding agency.

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Introduction.

Intro to neuromarketing.

There are many definitions of neuromarketing, but this sums it up quite well...

Neuromarketing is the application of neuroscience to marketing. Neuromarketing includes the direct use of brain imaging, scanning, or other brain activity measurement technology to measure a subject's response to specific products, packaging, advertising, or other marketing elements.

In some cases, the brain responses measured by these techniques may not be consciously perceived by the subject; hence, this data may be more revealing than self-reporting on surveys, in focus groups, etc.

Neuromarketing is actually quite a broad term for techniques including neuroscience, cognitive and social psychology.

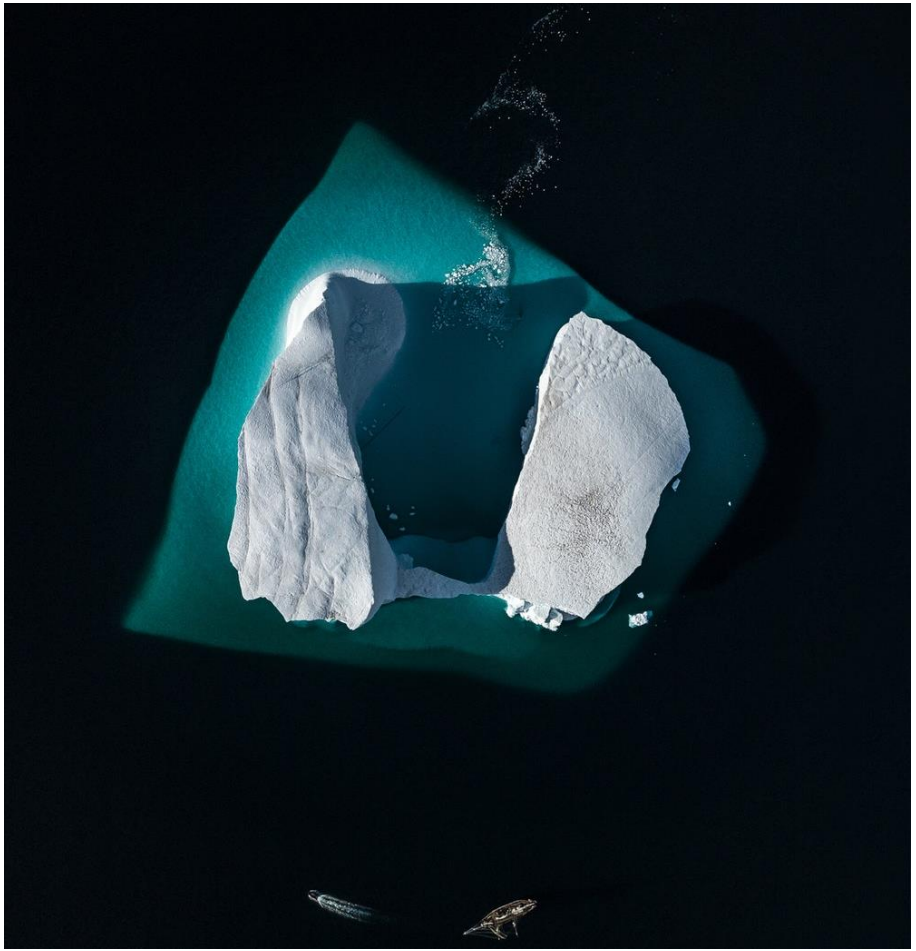
Why use consumer neuroscience?

We lack access to our thought processes and emotion.

Many decisions are driven by an emotional reaction

Neuro tools remove reporting bias, false reporting and subjectivity

Neuroscience gives a deeper understanding of the emotional processing in decision-making



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A brand's main aim should be to emotionally connect with people.

A brand is more than the...

Logo

Product

Experience

Pack

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A brand on the brain is nothing more than a web of connecting neurons that fire!

Giep Franzen
The Mental World of Brands, Mind, Memory and Brand Success

Your brand in the brain.

Brands are expectations based on memories.

This is how brands become shortcuts in decision-making.

Fundamentals of consumer neuroscience.

The pillars of neuroscience.

We are our connections.

We are wired to be connected, to be social. These social interactions shape the way we feel the world around us.

Context shapes our genes and our genes shape the context

We are our emotion.

We cannot make decisions without emotion!

Someone doesn't believe you – just show them a cat and a cucumber!

We are our unconscious.

Our unconscious mind makes up much of what the brain does.

Don't take our word for it – see what the scientist say on the BBC.

How our brain works.

The brain was designed to feel, not to think.

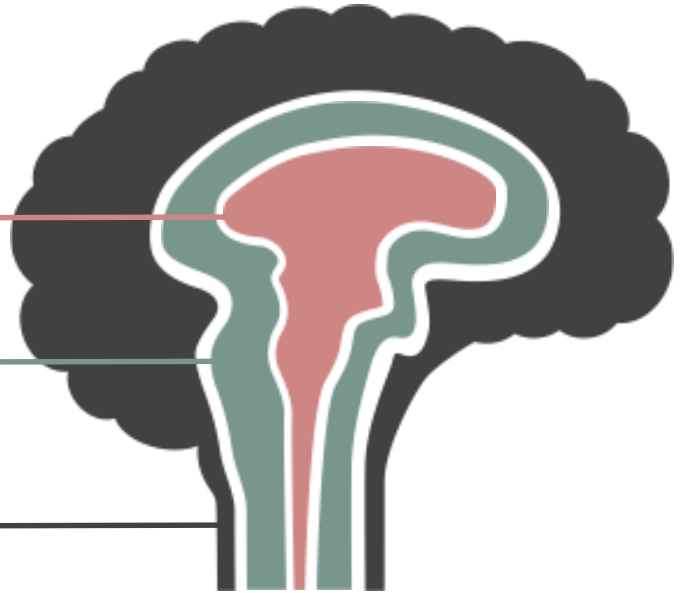
fast, automatic & outside our control

survival behaviours
proto-reptilian brain

emotional brain
limbic system

slow, rational & under our control

abstract brain
neocortex



The emotional revolution.

Neuroscience: the new paradigm.

The feeling dimension has been the missing link to understand behaviour.

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Just a quick note...

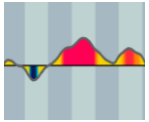
Many of the examples use neuro techniques that are described in the next slides!

Overview of the neuro and biometric measures.

Click here to see fieldwork in action and an explanation of our measures

EEG - Electroencephalograph.

Measures electrical activity from the brain. Specifically are we **emotionally engaged** (approach/withdrawal) with what we are seeing. Is it (emotionally) relevant to us or not?

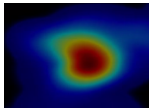


GSR - Galvanic Skin Response.

Measures physiological arousal reaction from changes in skin conductance produced by sweat. It shows if we are **activated** by what we see or hear, but it does not tell us about (positive/negative) of the emotional reaction.

ET - Eye Tracking.

Measures visual attention. Where and what are people looking on the ad.



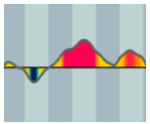
What about all that noise?

EEG particularly is particularly prone to 'noise' in the data, that is - things that affect the data other than we are interested in, for example blinking, head movement etc.

Because about 90% of raw EEG signal is noise it is important to consider this variable (and one reason that raw EEG data is not interpretable). Our algorithms clean the data and finds expected patterns, these include various types of filtering to ensure high quality of the signal itself as well as features that we apply during the study (blank pages before the stimuli, calibration, resting baseline, etc.).

Further the EEG algorithms have been developed to replicate around 80% of medical grade EEG, this means we have a portable and easy to use system that has been validated versus the highest quality equipment.

A bit more detail please...



EEG

Scientifically speaking...

Neuroscience measure - directly from the cortex

It measures higher order emotional responses. Specifically the measure we use is motivational valence based on Davidson's (1990) well established frontal asymmetry paradigm indicating "approach" or "withdrawal/avoidance" motivation.

It draws from the part of our brain that is a mix of our social emotions, habits, experiences, desires, perceptions and attitudes, as well as self-perception.

What it means for marketing...

Are we emotionally engaged (positive/negative) with what we are seeing? Is it relevant to us or not? This approach/withdrawal is indicative of this. While we do not know the exact nature of this e.g. is positive driven by love, pleasant, relaxing?

Often the lead measure as it can be more directly interpreted. The content and qual helps us to understand further..

GSR

Biometric measure – autonomic nervous system

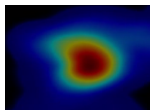
Controlled by subcortical (early) brain structures it measures emotional 'arousal'. Compared to EEG, this response may be thought of as fast/instinctive/primal given its origins in the brain.

This well established phenomena in the literature measures changes in skin conductance. Large changes in arousal (i.e. more sweat = higher activation) can be evoked by both very pleasurable and very repellent advertising stimuli. The measure ranges from high to low, giving us the amplitude of the response but not the direction

Often referred to as 'emotional intensity', 'activation' or 'arousal' it shows us the instinctive reaction. For example, whether we are activated and energised by what we see or hear, but it does not tell us about the direction (positive/negative) or the emotion.

For example a peak in activation could occur when we are excited, annoyed or anticipating something – these are important markers of this instinctive reaction.

Context/content of the ad and qual can further help us to understand this.



ET

Biometric measure – visual attention

It measures visual attention, which elements of a creative is drawing the eye, in what order, and the level of focus at particular points.

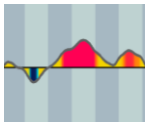
What we people looking at and for how long? What are the patterns of their gaze, what first draws the eye etc.

EEG and GSR measures can help us understanding what is driving this attention.

Motivational valence (EEG) and **arousal (GSR)** are independent of each other in their origin, i.e. they derive from different sources. However, their interpretation can be observed together – two measures that help to build a picture of the underlying emotional reactions.

Understanding neuro output.

EEG



Above the line indicates that there is more “approach” (positive engagement) than “withdrawal” (negative engagement). The opposite is true when we see the emotion trace below the line, indicating there is more “withdrawal” (negative engagement).

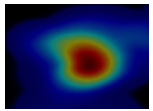
Red = Positive emotional engagement that is statistically higher than baseline.
Yellow = Can be directionally positive or negative but is moderately so i.e. not significant.
Blue = Negative emotional engagement that is statistically lower than baseline.

GSR

Measures the arousal. It tells us about the **peaks** in emotional reaction, not the direction (positive or negative).

The higher the bar, the greater the change in physiological activation/arousal from baseline at that moment, during the exposure to the stimulus.

ET



Heat maps

Red	The majority of people are looking at the element
Yellow	There is a medium level of attention towards the element
Blue	Very few people are looking at the element
No colour	No-one is looking at the element

Motivational valence (EEG) and **arousal (GSR)** are independent of each other in their origin, i.e. they derive from different sources. However, their interpretation can be observed together – two measures that help to build a picture of the underlying emotional reactions.

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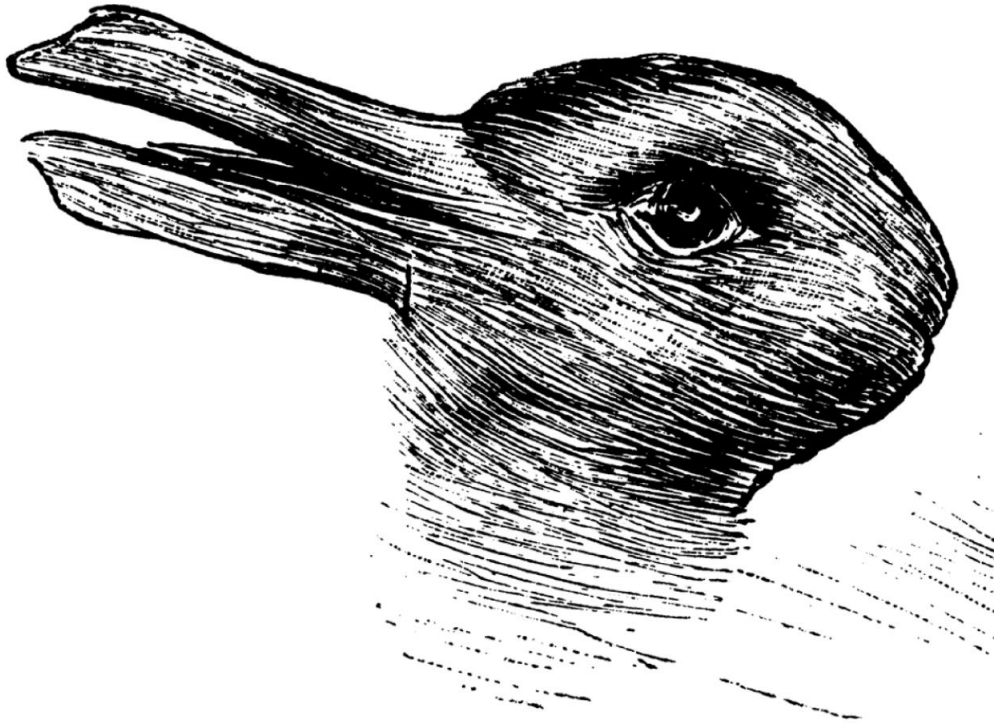
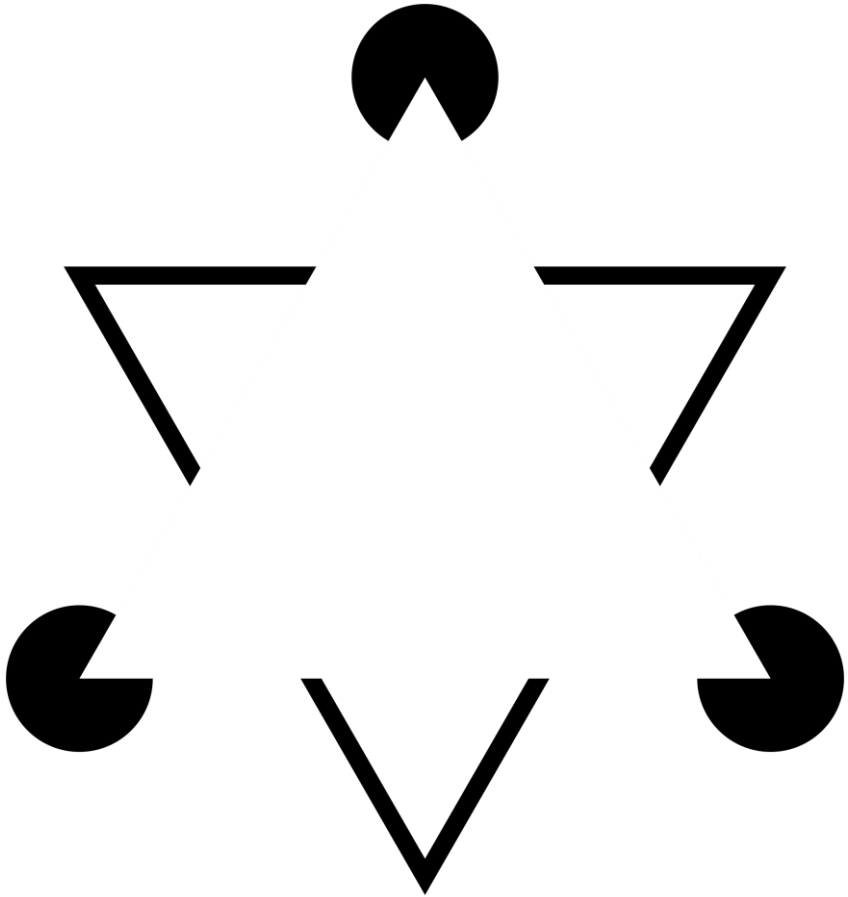
What do you see?





Sensation vs. perception.

Sensation is the process in which the sensory receptors are stimulated, that produce nerve impulses to the brain.

Perception is how the brain interprets these signals, how it interacts with other senses, memory and emotion.

The understanding of consumer perception is essential.

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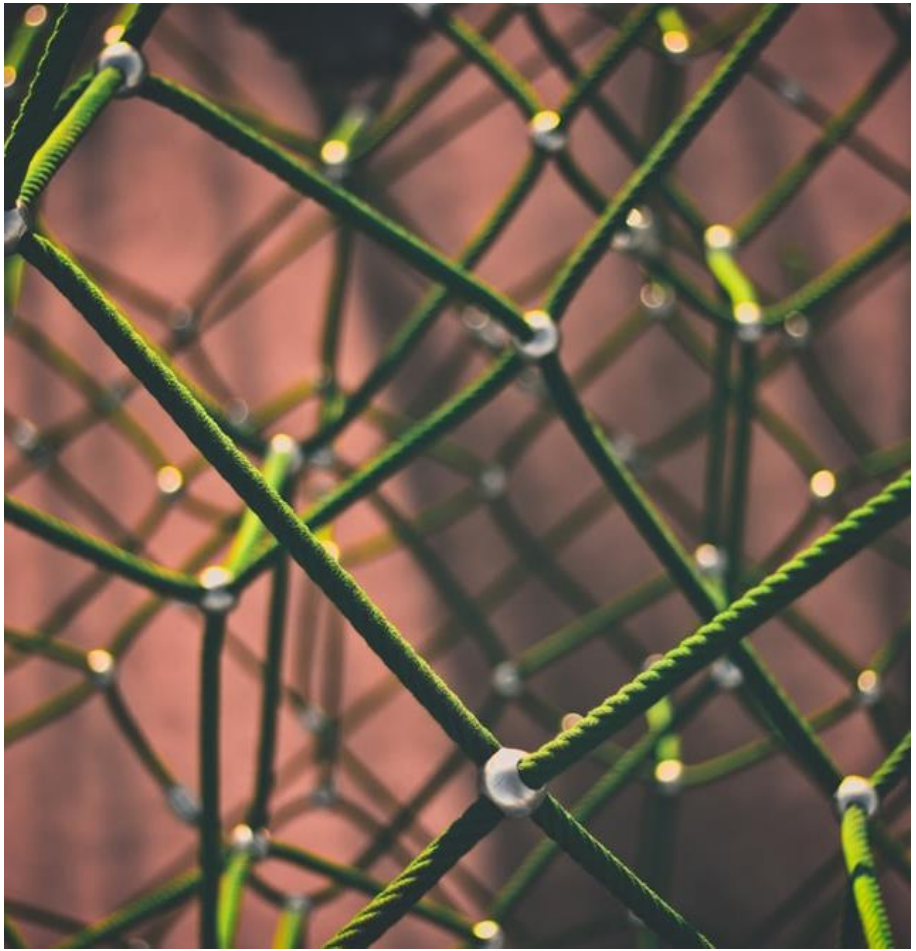
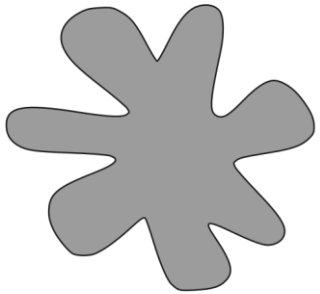
Everything works together.

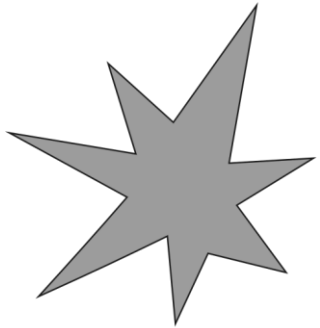
All of our senses interconnect.

We do not experience anything through one sense alone. Taste for example is affected by smell, sound and what we see. The famous KIKI BOUBA studies have shown how we overlay almost universal perceptions onto mere shapes. These then extend to other areas for example, textures, sounds and even tastes!

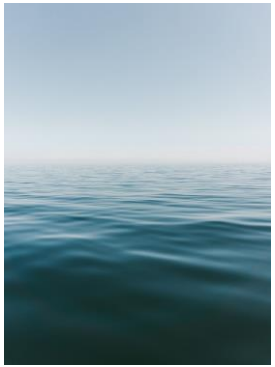




BOUBA



KIKI



Food in (implied) motion is perceived as fresher and more appealing.

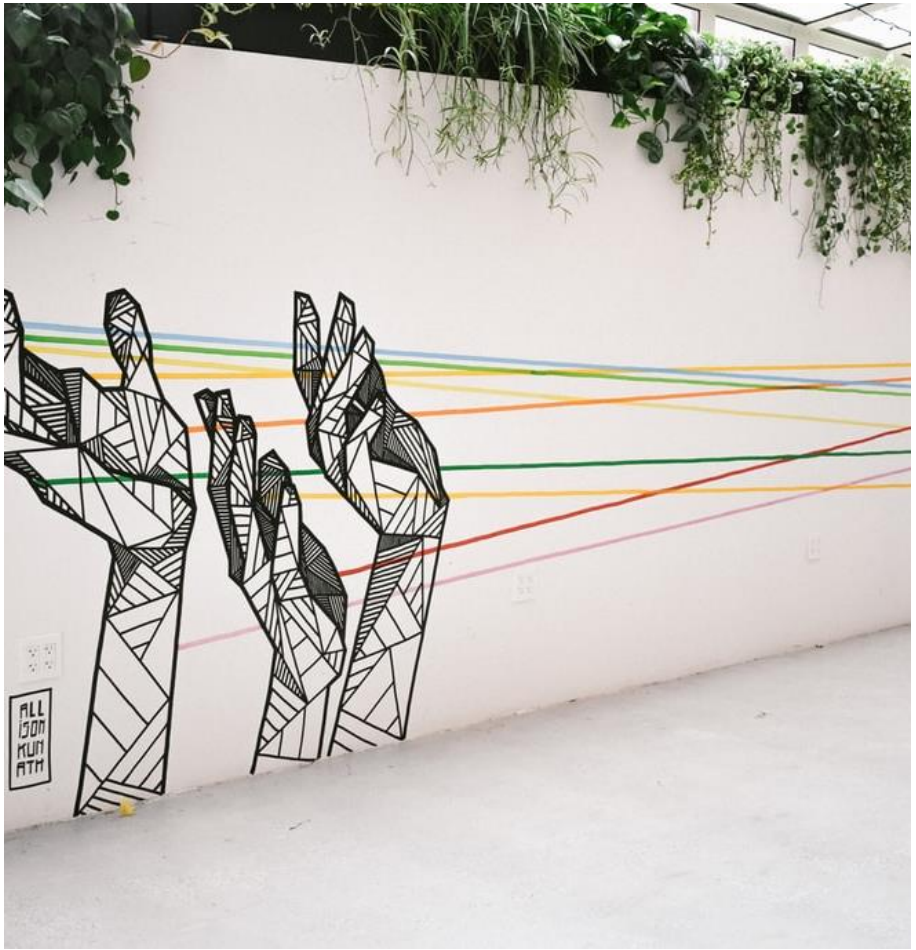
Fresh from the tree: Implied motion improves food evaluation. Yaniv Gvill et al. (2015)

Effort and skill makes people pay more for it.

Van Doorn et al (2015) Latte art influences both the expected and rated value of milk-based coffee drinks, Journal of Sensory Studies, 30

Embodied perception works better!

Consider how any image is activating numerous other associations, not necessarily just other images!



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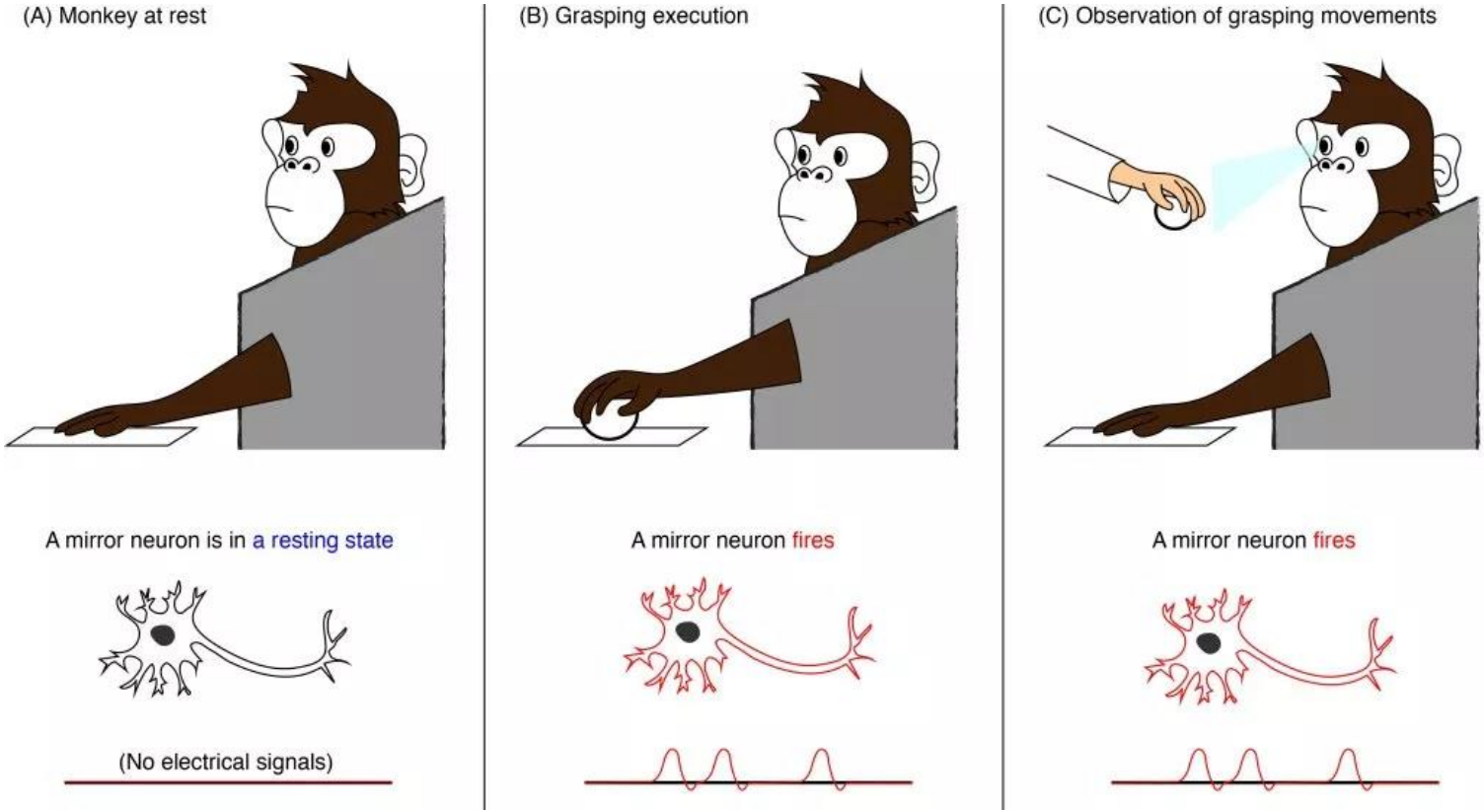
Mirror neurons.

Mirror neurons help us to interact with one another.

Mirror neurons are just that, they mimic the activity in the brain as we were experiencing it ourselves.



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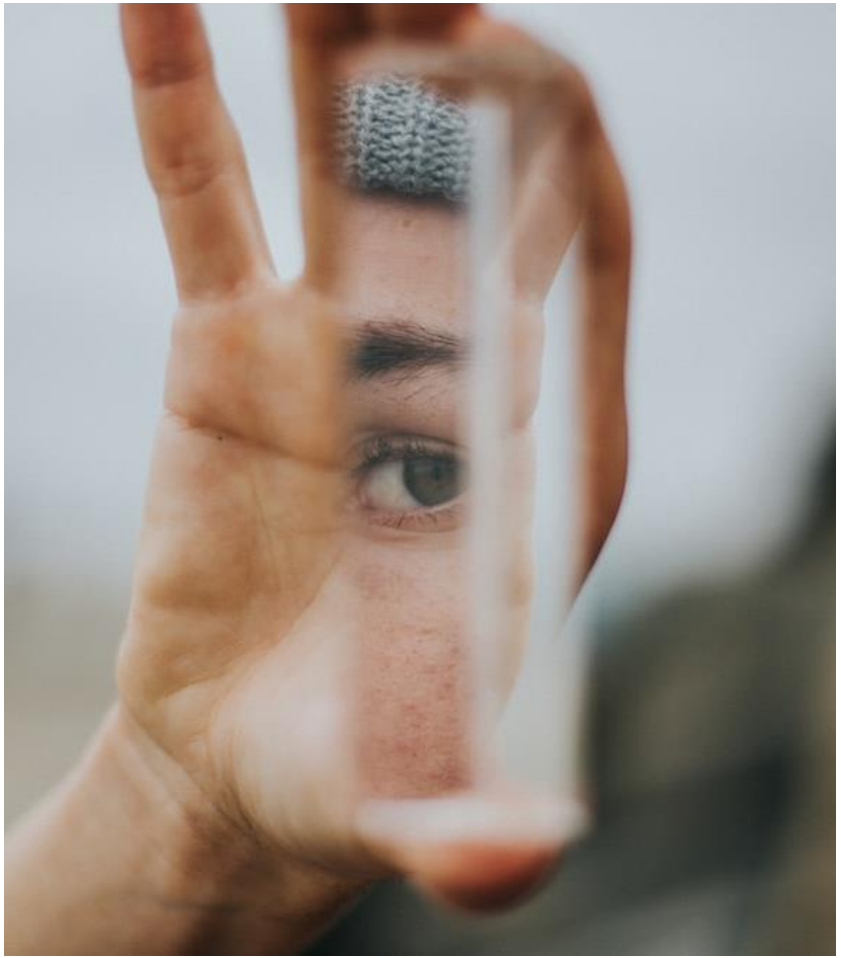
Make it real, make it authentic.



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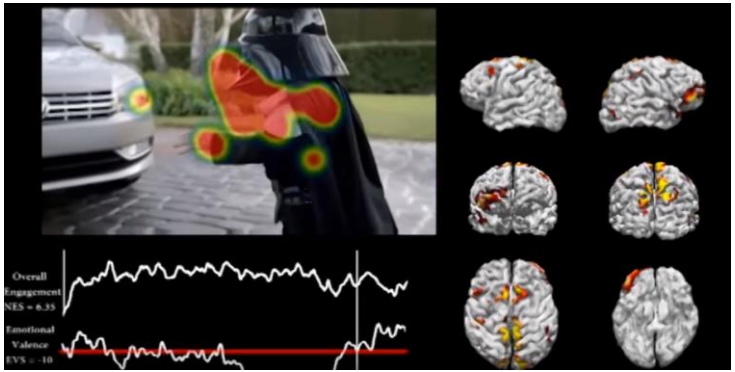
A story puts our whole brain to work...

The Force (VW).

Credit: Sands Research

By creating an engaging and emotional storyline with strong positive response, viewers were extensively engaged and strongly recalled the spot and more importantly, specifically recalled the brand associated with the commercial. Too often that correlation is lost and key branding moments are missed." You'll notice how clever Volkswagen was in putting the logo right at eye level as we get sucked into the emotional finale of the story. – Dr. Sands (Sands Research)



https://www.youtube.com/watch?v=V3s2zUvuM1g

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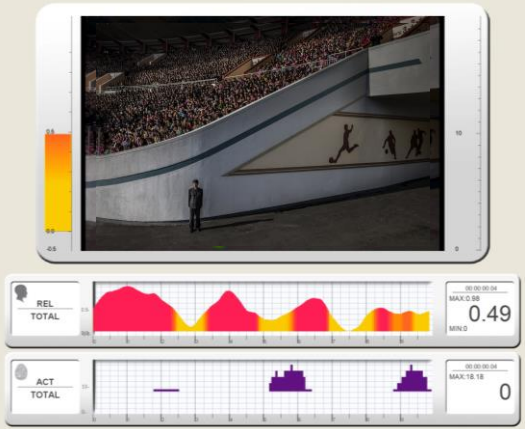
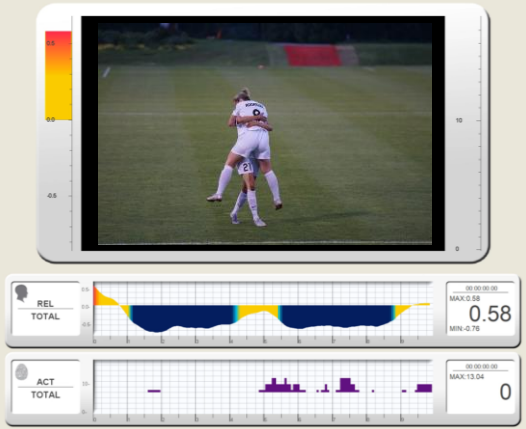
Your brand needs to have a story that activates mirror neurons (empathy)...make them feel what you want them to feel.

But can a picture tell a story?


REL
TOTAL
0.49
ACT
TOTAL
0


REL
TOTAL
0.58
ACT
TOTAL
0


REL
TOTAL
0.07
ACT
TOTAL
0

An image does not generate a single emotional reaction but, just like a film or ad, has a whole rollercoaster of emotion!

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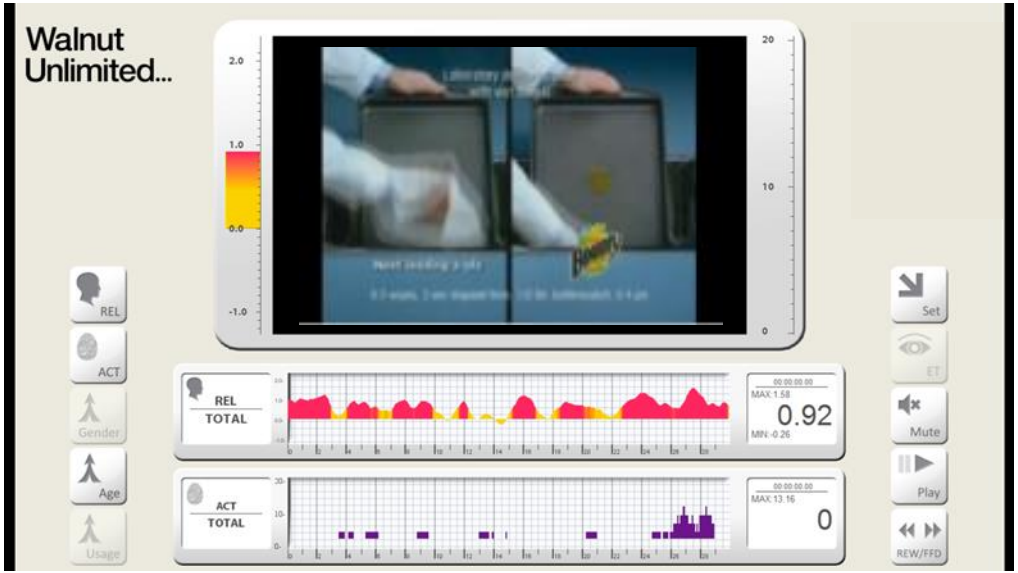
Sometimes it just needs to be simple.

Our brains like to be shown evidence of a product's superiority – this can aid decision making.

This bounty ad clearly showed it’s product superiority.



Powerful product demos are attractive to our brain and will unconsciously drive engagement, despite sometimes affecting rational likability!

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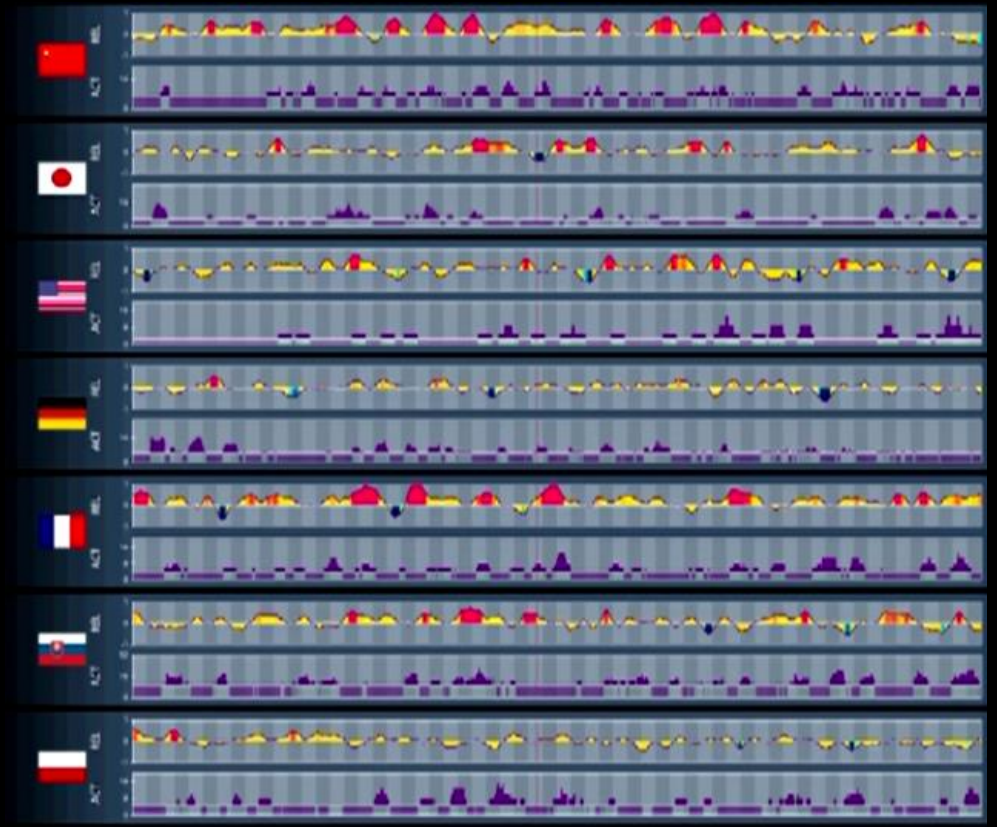
Cross culture.

Emotions are universal,
but not feelings.

The same ad can have a completely different emotional reaction across different cultures.



Cross-cultural differences can be amplified at an emotional level!

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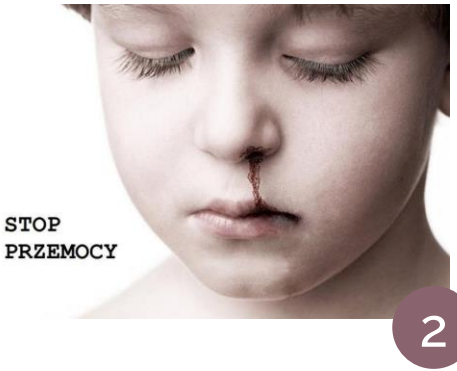
We are on the look out for the negative.

CASE STUDY I "STOP VIOLENCE"

Anti-violence press campaign.

1



2

3

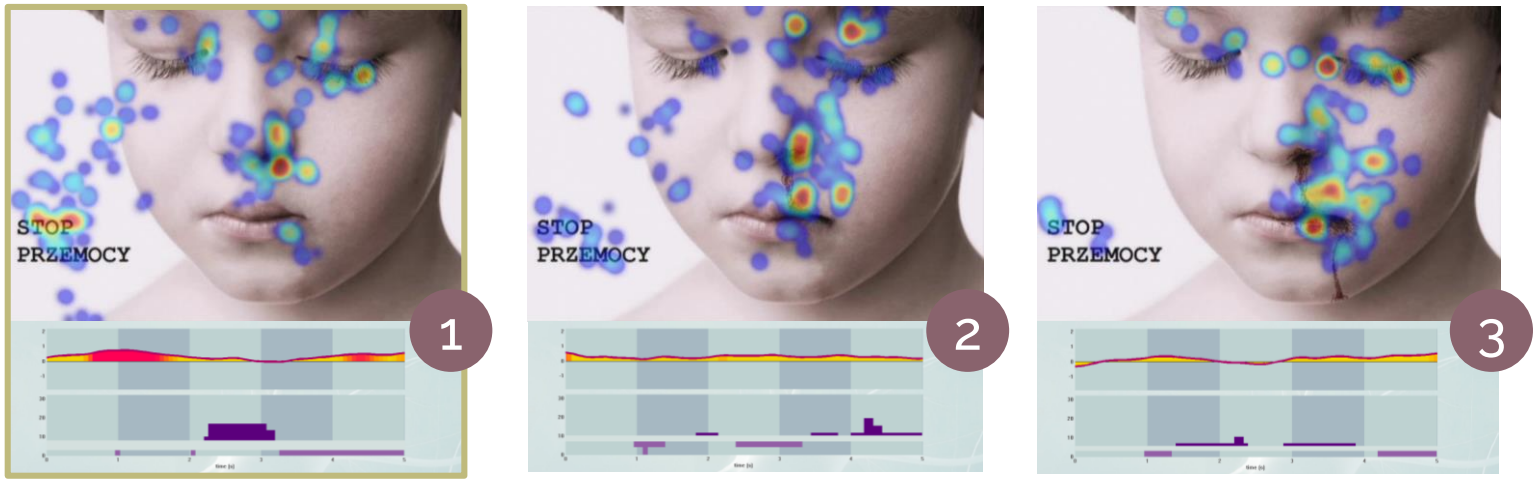
Research question

Which campaign execution would result in the most effective response; one which would balance shock while ensuring the call to action cut through?

Headline: Stop Violence

CASE STUDY I "STOP VIOLENCE"

Anti-violence press campaign.



The first execution was the most effective. Eye tracking shows that the blood and call to action were attended to while EEG shows a significant level of engagement and GSR a high level of activation. Traditional research techniques may have led us to a different decision but the neuro data shows us how too much blood overwhelmed people at the expense of the call to action.

Headline: Stop Violence

Our brains are attracted to the negative, it can be used to drive attention and engagement but is a complex creative element.

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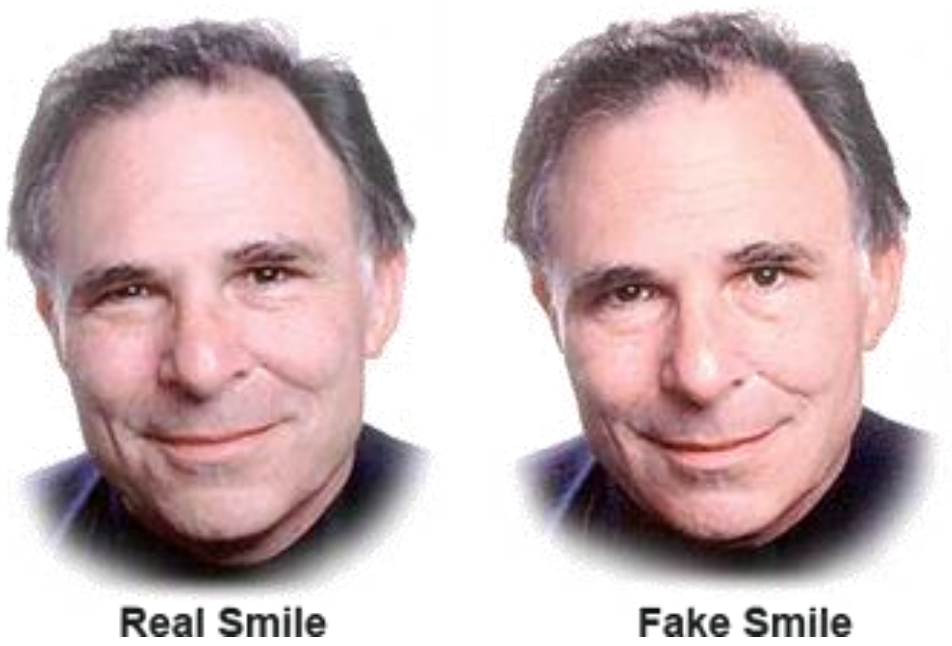
It’s not what you say.

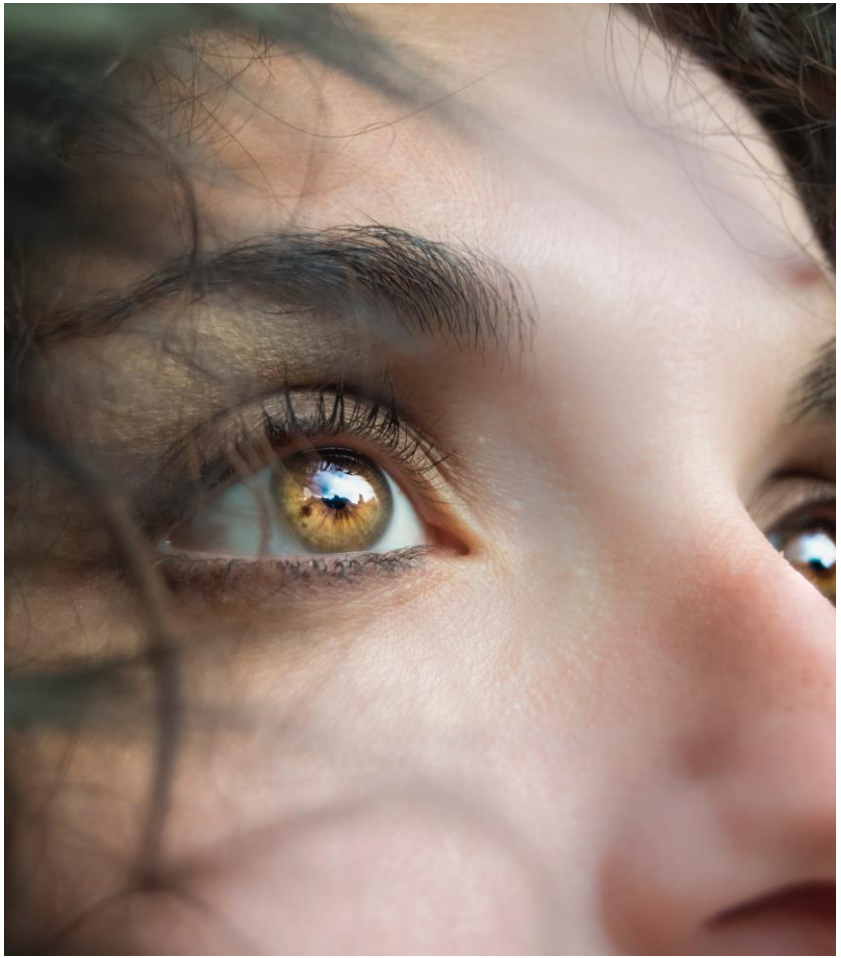
Which of these images is rated as more attractive?

The image on the right!

If you look closely the pupil on the right image is larger – these small differences are picked up by the brain, often implicitly and signal things such as attractiveness and trust.



Pupil dilation, even virtually, signals implicit cues to the brain including attractiveness & trust. Tiny changes in facial expression can be picked up by the brain, even if you are not consciously aware of it.



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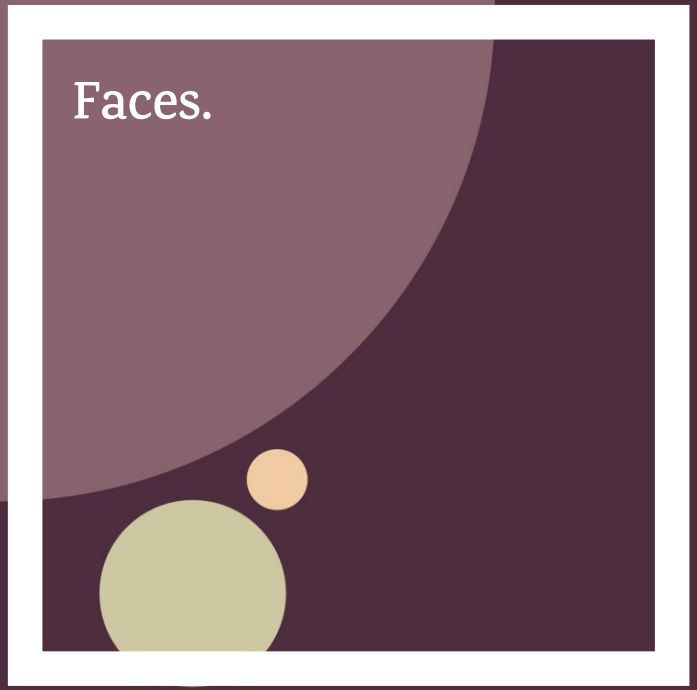
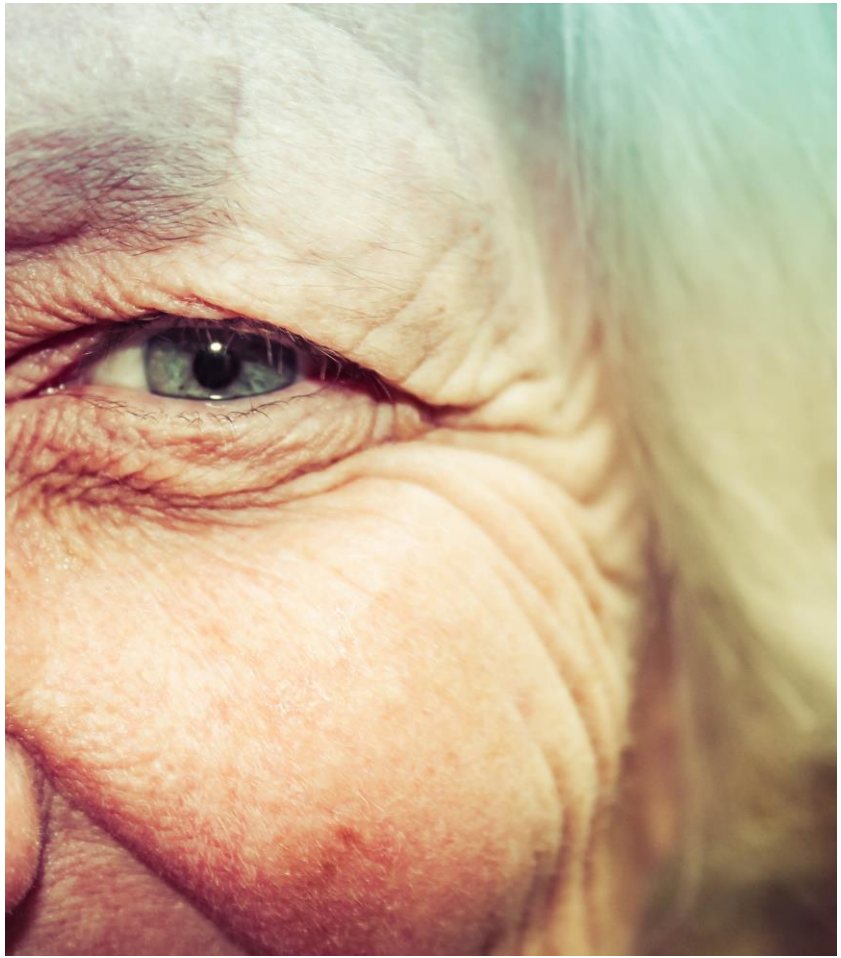
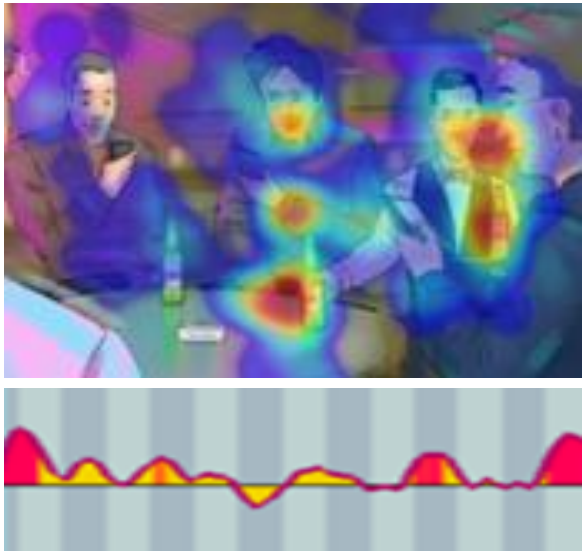
Faces.



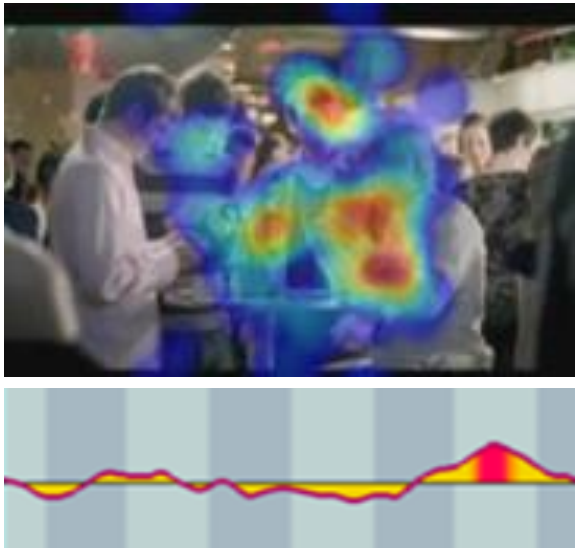


Faces are so important to humans that we have a specific brain region to process them - they are key to how we emotionally interact with others.

concept stage



final ad



Source: Roeland Dietvorst [AlphaOne] Neuromarketing World Forum 2018

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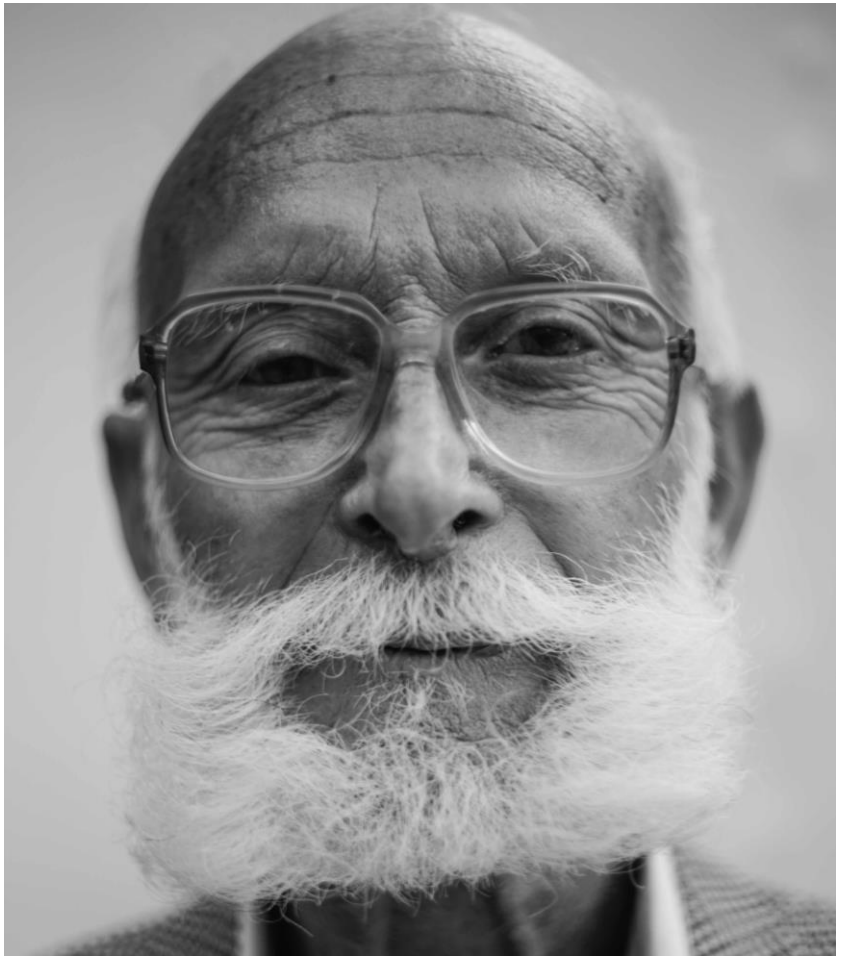
Close up shots of faces can be used to generate emotional engagement and drive attention.



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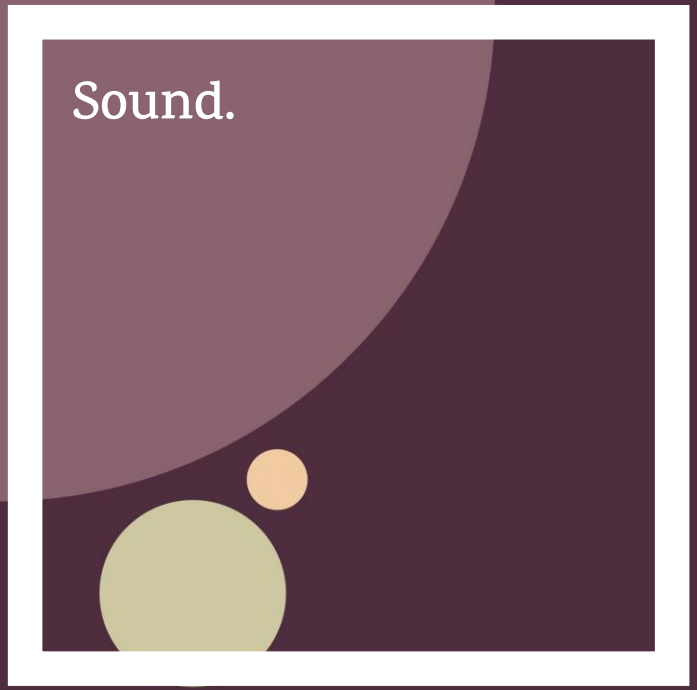

We are wired to respond to music.

Changing the soundtrack can have a big impact.

In this example the original Alicia Keys and jack White soundtrack to Quantum of Solace creates quite a neutral reaction. However, when replaced with Duffy we see a much stronger reaction – arguably the latter is more inline with our expectations for a Bond soundtrack!

Congruency is key!

Click here for the original Alice Keys version
Click here for the modified Duffy version

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Soundtracks can have a big effect on our unconscious emotional experience – choose carefully before you make a big investment

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Little things mean a lot.

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Even the smallest element can make a big difference.

CASE STUDY I SONY BRAVIA

Neuromarketing to identify key emotional scenes.

The frog jumping out of the drainpipe causes an emotional peak. Identifying key scenes, such as this, can aid cross comms. Key scenes can be used in other comms for better campaign recall and brand linkage.

Scene triggers an emotional peak

The EEG results shown help us to understand Emotional and cognitive engagement. This emotional relevance is positive (approach) if it above the line with peaks in **red** and negative if below the line with troughs in **blue**. This helps us to predicts whether the execution conveys messages and imagery that are self-relevant to people and whether they identify with depicted persons, situations and overall story.

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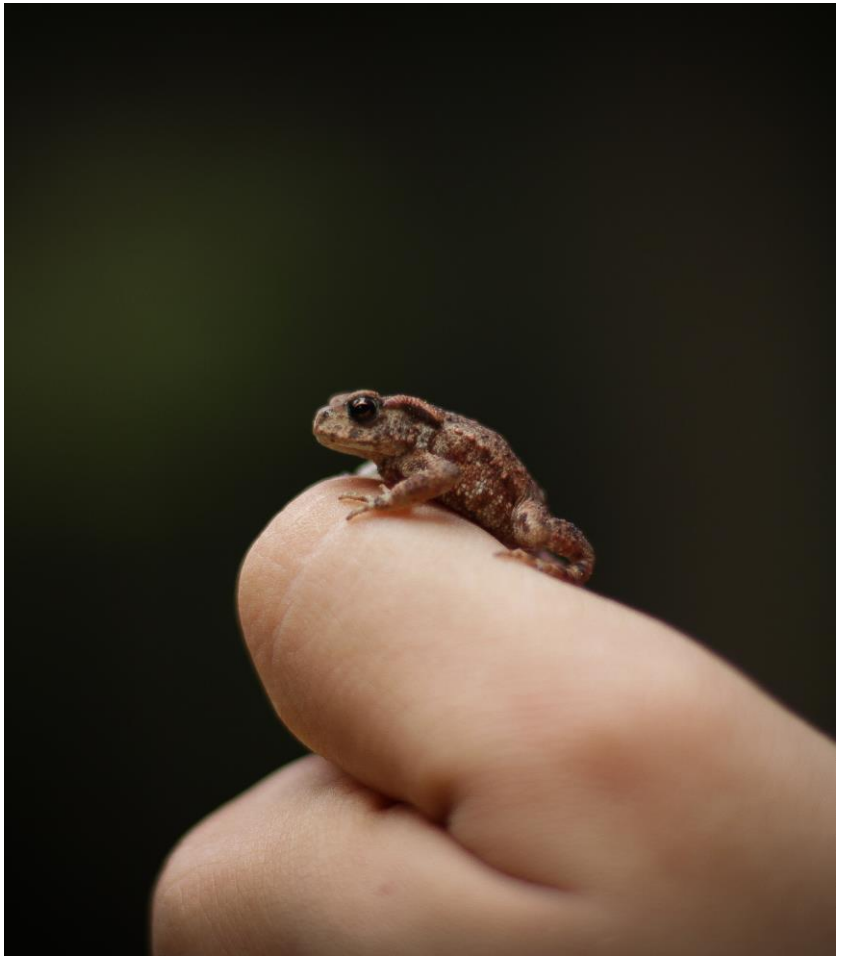
How our brain sews information together is complex. Tiny differences can have a huge impact.

What is your frog?



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Thinking is to humans as swimming is to cats; they can do it but they'd prefer not to.

Daniel Kahneman

Thank you.