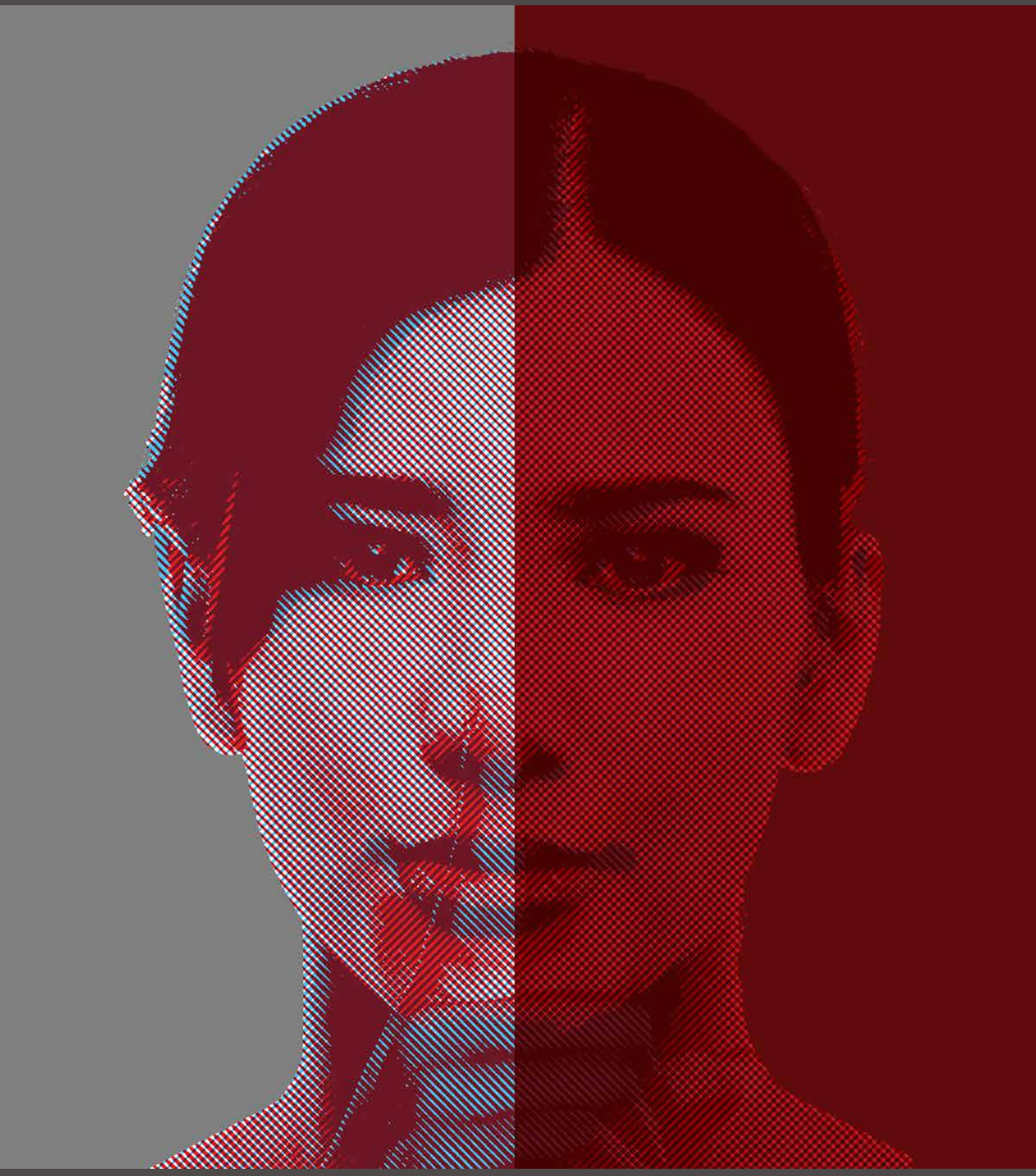
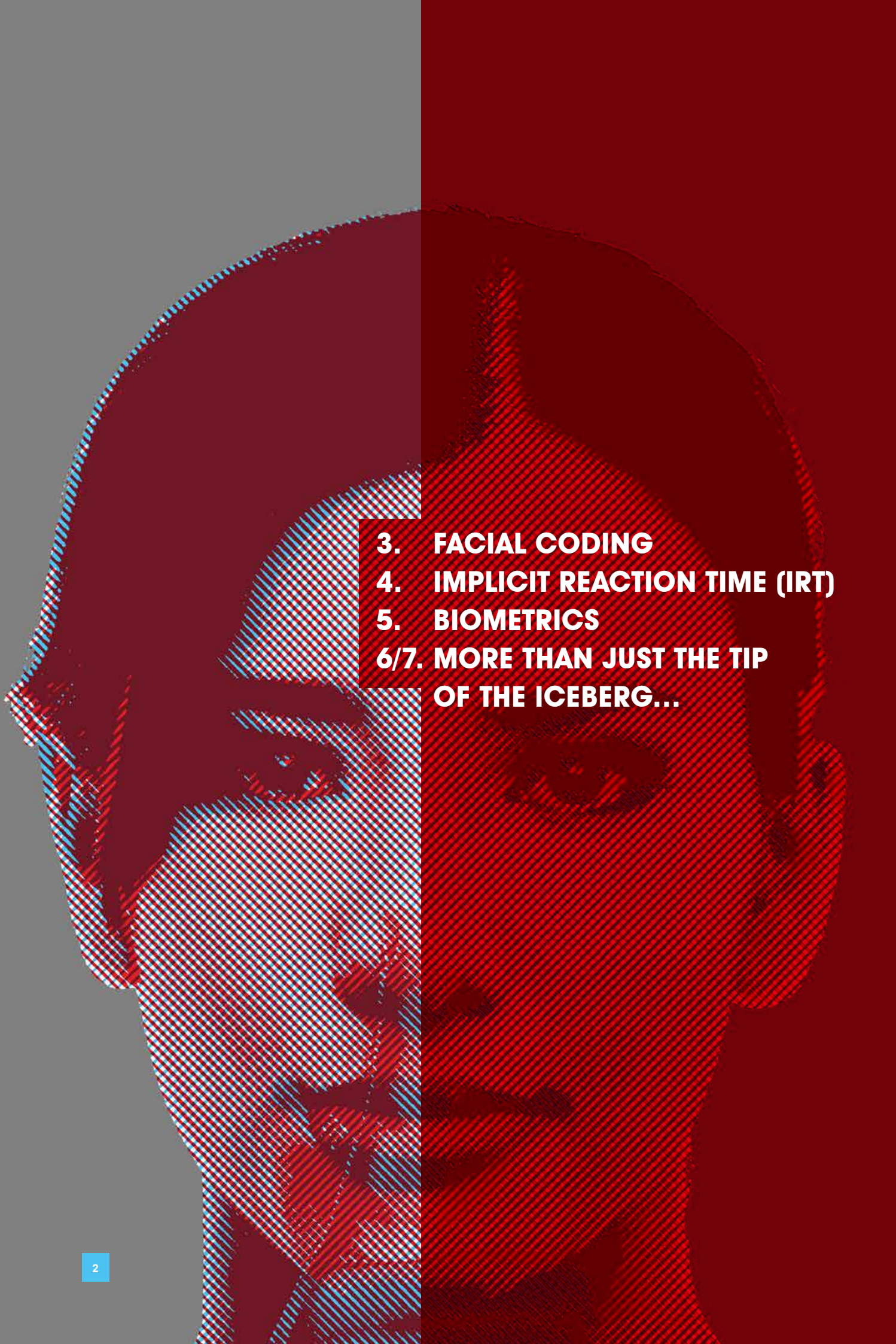
Ipsos ASI
The Advertising Research Specialists



Neuroscience:
Uncovering Hidden Truths

January 2014



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FACIAL CODING

WHAT IS AUTOMATED FACIAL CODING?

Our facial expressions serve as both a social communication tool and as a physical manifestation of our physiological emotional response system. And while we use our faces to express and communicate a range of emotions, many responses can manifest without our being conscious of them.

These subtle cues are expressed in the form of micro expressions. Facial Coding is a means of classifying micro expressions and movements of the face into known and identified emotional response categories (e.g., happiness, surprise, confusion, disgust, fear, sadness, etc.).

Manual coding techniques were established in the 1970s, but innovations and advancements in computer processing and machine learning have enabled the development of automated, online computer based approaches. This takes a labour-intensive technique for qualitative applications and makes it scalable and effective for quantitative approaches.

Automated Facial Coding is especially useful for understanding consumer response to video format content, like TV advertising, as it provides moment by moment insight into audience response.

WHY IS FACIAL CODING VALUABLE TO MY BRAND?

Facial Coding allows brands to understand consumers' non-conscious reactions and emotions, especially when that response is subtle or evolving at a pace that is otherwise difficult to articulate. The power of creative is the most important driver of advertising success. Advertisers, creative agencies and marketing researchers are embracing the role of emotions in people's choices and behaviours, recognising that emotion acts as both the gatekeeper and the driver of decision-making. Emotions direct our attention, enhance our memory and influence our behaviour.

Harnessing the power of Neuroscience, at Ipsos ASI we use Facial Coding to understand the nature of emotional response to advertising, and the way this varies and builds as an ad progresses. Further, it provides a measure of engagement via the presence of expressed emotion, measures of overall emotionality, benchmarks for levels of specific emotions, as well as an indicator of whether or not the creative is bringing consumers along the intended emotional journey.

WHAT INSIGHTS CAN FACIAL CODING OFFER?

Facial Coding provides diagnostic and descriptive insights on the whole as well as a scene by scene basis.

- How emotionally evocative is the ad overall?
- How effective is the ad at evoking specific emotions from the audience?
- What is the emotional profile or flow of the ad? Which scenes are most effective at generating positive (or negative) emotion?
- Whether key parts of an ad are working optimally – e.g. are people positively engaged where the brand or its benefits are presented or implied.
- Aids in identifying potential elements of an ad to retain or optimise – in creative development or when seeking to create cut-downs.

HOW DOES FACIAL CODING WORK?

When an emotional response occurs within the brain in response to a visual stimulus, it can trigger minute changes in facial expression. Using a web based application facial expressions are recorded via computer based webcams. These recordings are run through sophisticated software to code and classify the responses on a second by second basis into specific emotions. The online and webcam based technology is unobtrusive, scalable and executable anywhere an online survey can be conducted.

IMPLICIT REACTION TIME (IRT)

WHAT IS IMPLICIT REACTION TIME TESTING?

Learning from Neuroscience expands our understanding that experiences and communication influence our associations and actions at both conscious and unconscious levels. Ideas, beliefs and perceptions are formed on an ongoing basis, even when we are not consciously aware of their impact.

And while these responses are processed below the conscious level making them sometimes difficult to express or capture through traditional survey metrics, the social psychology tool Implicit Reaction Time testing (IRT) can provide a measure of their impact.

IRT measures subtle shifts in reaction time as an indication of strength of association—the more closely or strongly associated a concept is with an item—such as a brand, commercial, or category, the more quickly responses are provided.

WHY IS IMPLICIT REACTION TIME VALUABLE TO MY BRAND?

Implicit Reaction Time testing provides a measure of unconscious ad or brand impact. Specifically, it quantifies the shift that creative delivers on brand perception and measures whether the creative meaningfully delivers against strategic objectives on an unconscious level.

WHAT INSIGHTS CAN IMPLICIT REACTION TIME OFFER?

At Ipsos, we use Implicit Reaction Time testing to provide measurement of unconscious ***Commitment*** and ***Confidence*** of response. Implicit Reaction Time testing identifies:

- If your creative effectively moves the needle on key strategic messages, associations and brand attributes
- If consumers truly associate key attributes to your brand or if they are playing ***"lip service"*** and offering positive ratings which are actually false positives.

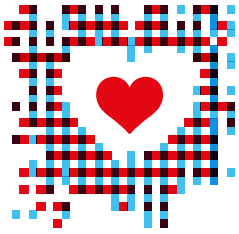
HOW DOES IMPLICIT REACTION TIME WORK?

Implicit Reaction Time testing is imbedded into online surveys without any additional equipment or hardware, making it globally scalable and cost effective. IRT requires a sophisticated but streamlined calibration process to establish consumers' baseline reaction times. Following stimuli exposure, changes in reaction time are compared against the individual's baseline measurements, then aggregated and compared to a control group (without stimuli exposure) to deliver impact on brand perceptions, emotional states and confidence.

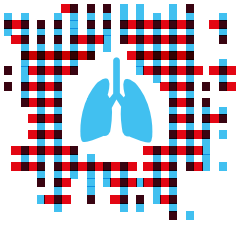
BIOMETRICS

WHAT IS BIOMETRICS?

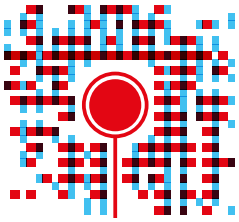
Neuroscience shows that when individuals are exposed to any stimulus they experience emotions first, followed by an array of thoughts, feelings and actions – all which are influenced by our initial, subconscious emotions. While these initial emotions are processed below the conscious level, Biometrics can assess their intensity, by measuring the physiological response to advertising, as manifested via:



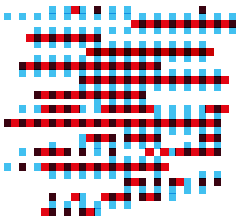
HEART RATE



RESPIRATORY RATE



SKIN CONDUCTANCE



MOTION

These measures are converted into a measure of emotional engagement from second to second during an ad.

Biometrics can demonstrate beyond doubt that emotional engagement has occurred, and is unique in its ability to measure intensity of emotional response. When combined with appropriate survey research, and other applications of Neuroscience such as Facial Coding and Implicit Reaction Time, we can understand in detail HOW and WHY it occurred, and whether this makes a positive difference for the brand.

WHY IS BIOMETRICS VALUABLE TO MY BRAND?

Biometrics allows brands to understand consumers' non-conscious reactions and emotions. The power of creative is the most important driver of advertising success - through Biometrics, we know that this is a power that can be felt.

Advertisers, creative agencies and marketing researchers are embracing the role of emotions in people's choices and behaviours, recognising that emotion acts as both the gatekeeper and the driver of decision-making. Emotions direct our attention, enhance our memory and influence our behaviour.

Harnessing the power of Neuroscience, at Ipsos ASI we use Biometrics to understand the intensity of emotional response to advertising, and the way this varies and builds as an ad progresses.

WHAT INSIGHTS CAN BIOMETRICS OFFER?

Biometrics indicates how much the target audience is emotionally engaged with an ad, as well as the intensity of their response. It will tell you:

- Whether an ad is generating emotional engagement overall.
- Whether key parts of an ad are working optimally – e.g. are people engaged where the brand or its benefits are presented or implied.
- Elements of an ad to retain or optimise – in creative development or when seeking to create cut-downs.

HOW DOES BIOMETRICS WORK?

When an emotional response occurs within the brain, it generates an automatic reaction in our nervous system that leads to changes in certain physical responses. These include changes in skin conductance, heart rate and breathing. Biometrics measure these signals, thereby directly assessing activity in the emotional centres of the brain.

Ipsos ASI can provide access to Biometric insight in a simple and practical way. By equipping respondents with a Biometric chest belt and (GSR) finger sensor, we can collect information on these physical responses in an unobtrusive way. The output, includes key Biometric indicators along with a Biometrics "trace" which shows how intensity of emotional response changes during the course of an ad.

MORE THAN JUST THE TIP OF THE ICEBERG...

HOW MANY ICEBERGS HAVE YOU SEEN? NONE? ARE YOU SURE?

Well if you have attended any market research conference, or read papers on Neuroscience, I'm sure you would have seen many. It may well feel like a tired visual now but it is one of the best metaphors to show how 95% of brain processing occurs below the level of consciousness. Whilst most traditional market research techniques tap into what's above sea level, Neuroscience helps us tap into the 95% below the waterline.

We credit Daniel Kahneman for making the language of Neuroscience much easier for marketers when he introduced the concept of System 1 and System 2 dual brain processing systems in his Nobel prize-winning book ***Thinking, Fast and Slow***.

SYSTEM 1 – FAST, EFFORTLESS, NON-CONSCIOUS AND INVOLUNTARY, DRIVEN FROM EMOTIONAL CENTRE.

SYSTEM 2 – SLOW, EFFORTFUL AND CONTROLLED, DRIVEN BY THE PREFRONTAL CORTEX – YOUR CONSCIOUS MIND.

Needless to say, most of the decisions we make during our day are made via System 1. If they weren't, we'd never get anything done. An example of a low risk, automatic choice might be the choice of a brand in any particular supermarket aisle. Traditional market research techniques, applied properly, are great for probing System 2 – but Neuroscience helps us get a much better understanding of System 1.

The advent of scaleable, practical applications for Neuroscience enables market research to help clients understand the 95% that lies below the waterline. However, it is not desirable for advertisers to drop survey-based approaches to campaign evaluation or brand equity measurement in lieu of System 1 measures because both are important in comprehending how advertising works. The best System 2 approaches are tried-and-trusted, and painstakingly validated to predict in-market performance. However, the additional application of Neuroscience brings a whole new layer of understanding into how it works on an unconscious level.

We also need to be mindful that "Neuroscience" is a catch-all heading for a wide range of approaches. Rather than simply championing one approach, it is important to recognise that each approach has different best applications. As has always been the case for market research, it is important to apply techniques which are relevant and appropriate to your research objectives. One neuro size definitely does not fit all!

Take, for example, **Biometrics.** By using sensors applied to the chest and fingers, we can measure the non-conscious, emotional response to advertising, such as changes in heart rate and respiration. Properly applied, it provides irrefutable evidence that emotional engagement has occurred – and if it does not, the advertising has very little chance of influencing the viewer. We know this because biometric responses correlate highly with survey measures known to be predictive of in-market success. This is particularly true when engagement peaks towards the end of an ad – when engagement is high around the key branding moment. However, Biometrics does not tell you **why** that engagement has occurred, or whether the emotions felt are positive or negative – and it won't tell you what difference has been made for the brand.

Similarly, **Facial Coding** – automatic recognition of changes in facial expression, from footage captured via webcam as part of an otherwise normal online survey – can help differentiate between the different emotions felt. It helps us understand, for example, which ads are generating happiness or surprise – those that evoke emotion are more likely to be successful because, as with Biometrics, they have engaged the consumer.

Implicit Reaction Time will tell you what difference has been made for the brand. By measuring not just whether a respondent endorses a brand for a desired attribute, but *how quickly*, we understand whether that association is implicit – that is to say, a deeply held connection, likely to be evoked when considering brand choice. We can understand which associations are the key drivers of equity for a brand, and then assess whether those associations are more implicit where there has been exposure to advertising.

We continue to conduct extensive research and development into the application of these approaches and others, in order to make them accessible to our clients in the most practical and scaleable way. The outcome is the best of both worlds:

- From System 2 - meaningful performance indicators for brands and advertising, validated against market share and sales effects – based around sound survey research principles such as not asking people to answer questions to which they can't possibly know the answer.
- From System 1 - Implicit Reaction Time to help gain a better understanding of the deeply held emotional connections between people and brands, and techniques such as Facial Coding and Biometrics to help understand the involuntary engagement and emotional responses which might be helping to strengthen them.

IN THE MEANTIME, WE KNOW THAT:

- Biometrics gives us the most reliable indicator of whether emotional engagement has occurred.
- Facial Coding can help us understand which emotions are being felt at different times, and by extension, whether these are useful and appropriate.
- Implicit Reaction Time can help us understand not just whether people believe something about an ad or a brand, but whether this is a deeply held implicit association – one felt with the heart, not just thought with the head.

It is critical to find a research partner expert in all areas of Neuroscience that can truly recommend the best approach. Hence an agnostic supplier is key!

And finally remember that comparing both traditional and Neuroscience findings will most likely provide deeply enriching, more insightful results. You need an experienced and knowledgeable researcher to layer understanding from the two parts of our minds - the conscious and the unconscious. But that's when you really will start to dip way below that waterline to see more of the iceberg. This equates to seeing potential and opportunities for perfecting your ads as never before.

About Ipsos ASI

At Ipsos ASI, we help clients to define, shape and tell more effective brand stories in a fast-changing media landscape.

Founded in 1962, our approaches are state-of-the-art, but draw on 50 years of experience. We explore, probe and challenge conventional wisdom, integrating the latest advances in Neuroscience, but basing our approaches on a simple and validated philosophy.

Ipsos ASI is part of Ipsos, one of the largest and best known research companies, with offices in more than 80 countries.

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