Emotional Marketing

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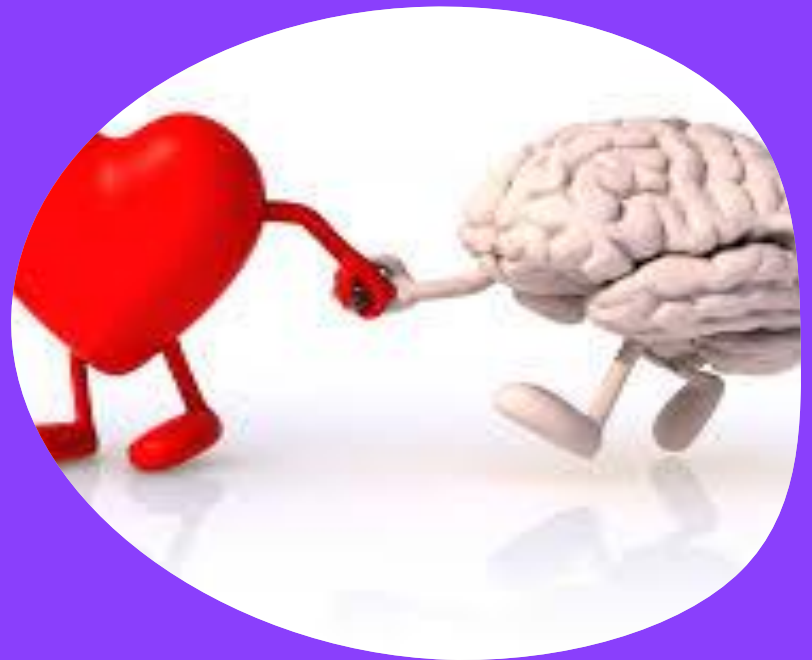
What is Emotional Marketing?

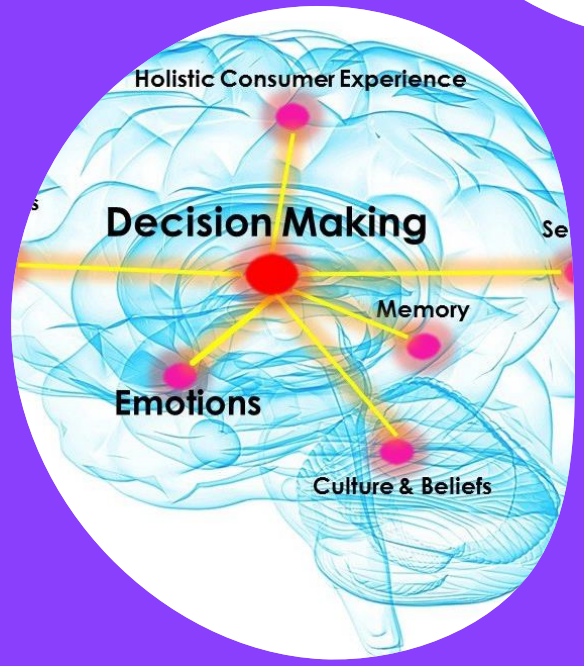
- **Emotional Marketing refers to marketing and advertising that primarily uses emotional appeals to make your customers and prospective customers notice, remember, share, and buy your company's products or services.**



- **There are many different emotions but eight primary ones: anger, fear, sadness, disgust, surprise, anticipation, trust, and joy.**

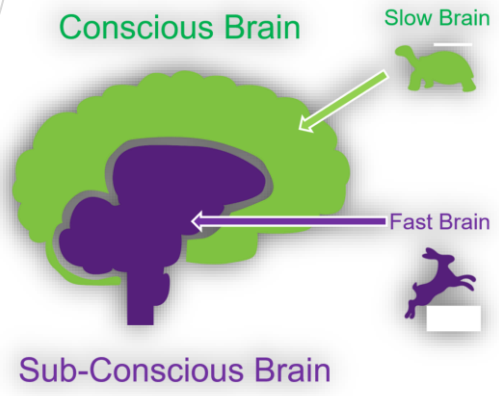
Decision making process:

What happens to the brain when we make decisions?



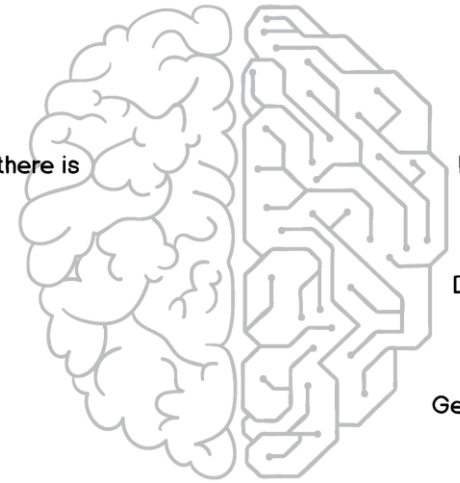
- **Decision-making is a complex process that we only partially understand.**
- **We do know that the prefrontal cortex (PFC) is involved in it, along with the areas that send the PFC inputs, or regulate these inputs: particularly the amygdala, hippocampus, thalamus, and basal ganglia.**
- **The prefrontal cortex receives information from many parts of the brain, and this information is the "raw material" for decision-making. Apart from sensory and motor information from various cortical and thalamic regions, the prefrontal cortex also receives emotion-related signals from the amygdala, context and memory signals from the hippocampal formation, and the results of reward/punishment related learning from basal ganglia loops.**

All these functional associations only capture a part of what each of these brain areas do. The experimental data are quite complex



Kahneman's model divides the mind's processes into two distinct systems:
System 1 (is the brain's fast, automatic, intuitive approach)

System 1	System 2
Fast	Slow
Implicit	Explicit
What you see is all there is	Logical and Sceptical
Effortless	Effortful
Uncontrolled	Deliberately controlled
No self-awareness	Self-awareness
Assessing situation	Getting new information
Delivering updates	Making decisions



System 1 activity includes the innate mental activities that we are born with, such as a preparedness to perceive the world around us, recognize objects, orient attention, avoid losses - and fear spiders! Other mental activities become fast and automatic through prolonged practice.

System 2 is (the mind's slower, analytical mode, where reason dominates) Usually, system 2 activity is activated when we do something that does not come naturally and requires some sort of conscious mental exertion.

Emotions Definition

- Emotion, in its most general definition, is a neural impulse that moves an organism to action, prompting automatic reactive behavior that has been adapted through evolution as a survival mechanism to meet a survival need.

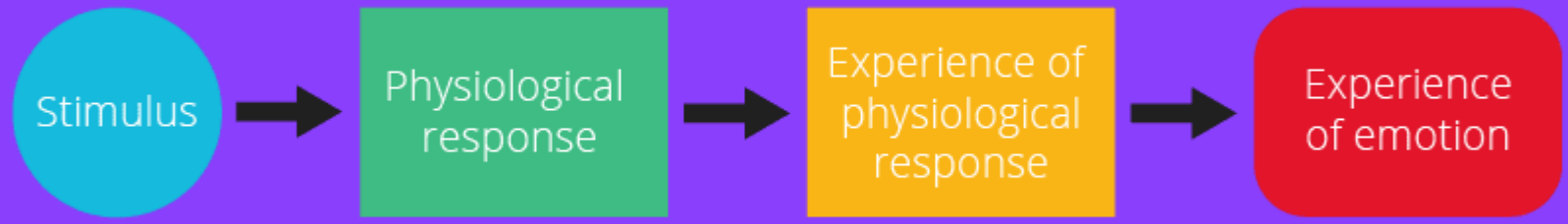
Feelings versus Emotions

Feelings. Both emotional experiences and physical sensations — such as hunger or pain — bring about feelings, according to Psychology Today. Feelings are a conscious experience, although not every conscious experience, such as seeing or believing, is a feeling, as explained in the article.

Emotions. According to Psychology Today, an emotion "can only ever be felt…through the emotional experiences it gives rise to, even though it might be discovered through its associated thoughts, beliefs, desires, and actions." Emotions are not conscious but instead manifest in the unconscious mind. These emotions can be brought to the surface of the conscious state through extended psychotherapy.

Theories of Emotions

James' Theory



This is one of the earliest formal theories of emotions, formed across 1884 and 1885 by William James and Carl Lange.
The theory states that emotions are separable from physiological reactions to events.

The sequence that they posit begins with a stimulus that triggers a bodily response, and as an individual experiences these physiological changes, this is also experienced as an emotion.

Two-factor Theory

The theory states that emotions are experienced at the end of a chain of events, beginning with physiological changes, followed by the cognitive attribution of the source of those changes, and finally the emotion itself.

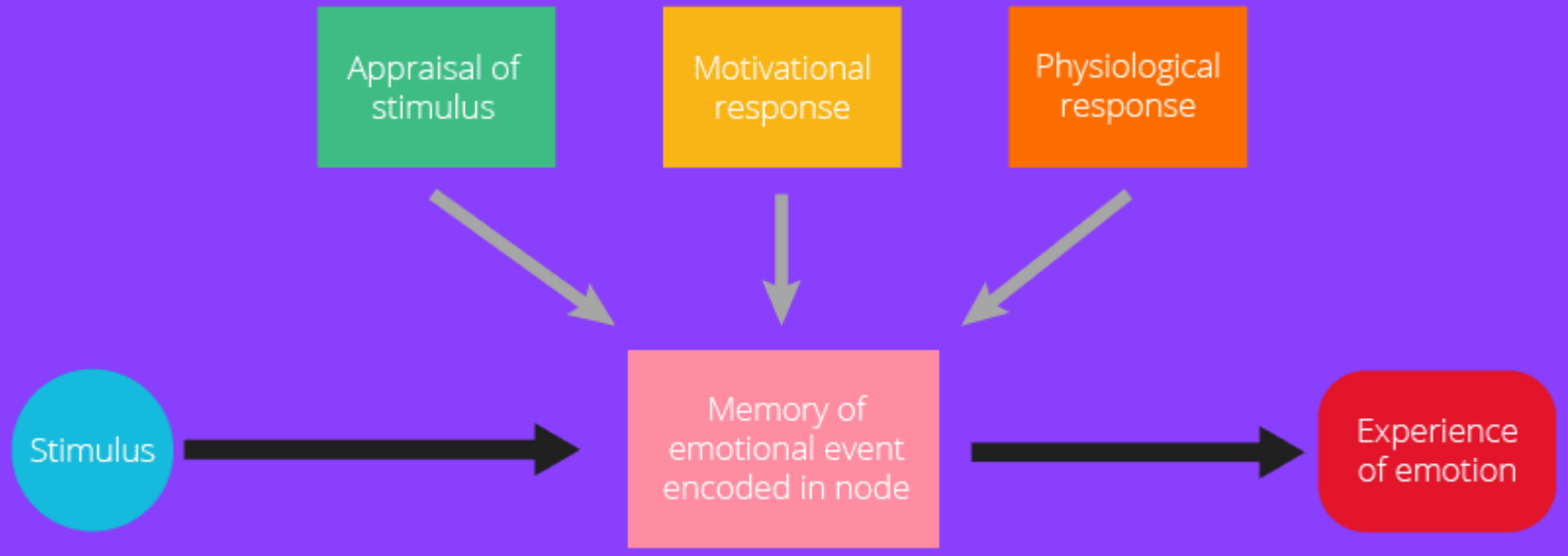
Criticism of this theory came from studies showing that emotions can be modulated, even when an individual is not able to make a conscious cognitive attribution of the stimulus. A study by William Kunst-Wilson and Robert Zajonc found that participants could form affective discrimination of stimuli even when they were unable to guess what the stimulus was at a rate better than chance [5].

This showed that the cognitive attribution could still form an emotionally-loaded attribution of a stimulus, even when the context and environment don't consciously indicate how this attribution should be made.

Network Theories of Emotions

More recent theories of emotions have used emotion appraisal theories and behaviorist principles as a starting point for a more complex and multifaceted understanding of emotions. Behaviorism is a psychological theory formalised and developed by Burrhus Skinner, which states that behaviors can be modulated according to the valence of the stimuli (behaviors can be reinforced or punished to increase or decrease their occurrence, respectively).

Network theories assume that reinforcing and punishment of behaviors progressively builds complexity in the way in which emotions are developed in response to stimuli. Memory "nodes" are created, that contains a range of information that pertains to the valence of a stimulus – these nodes can be elaborated upon as new information emerges, and new stimuli are encountered, ultimately developing a network of responses.

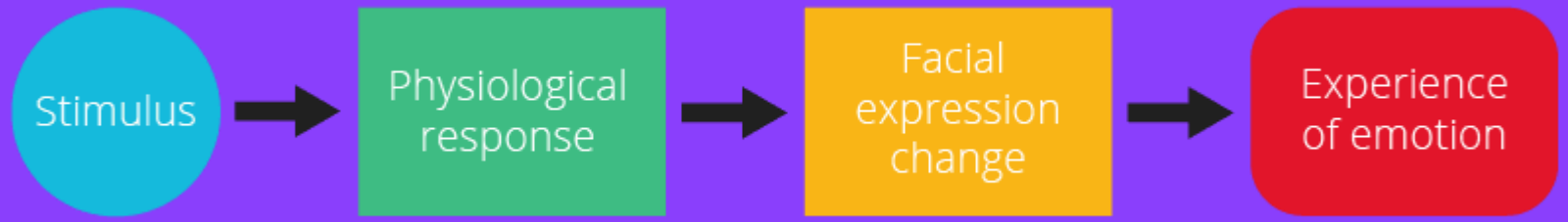


Facial-Feedback Theory of Emotion

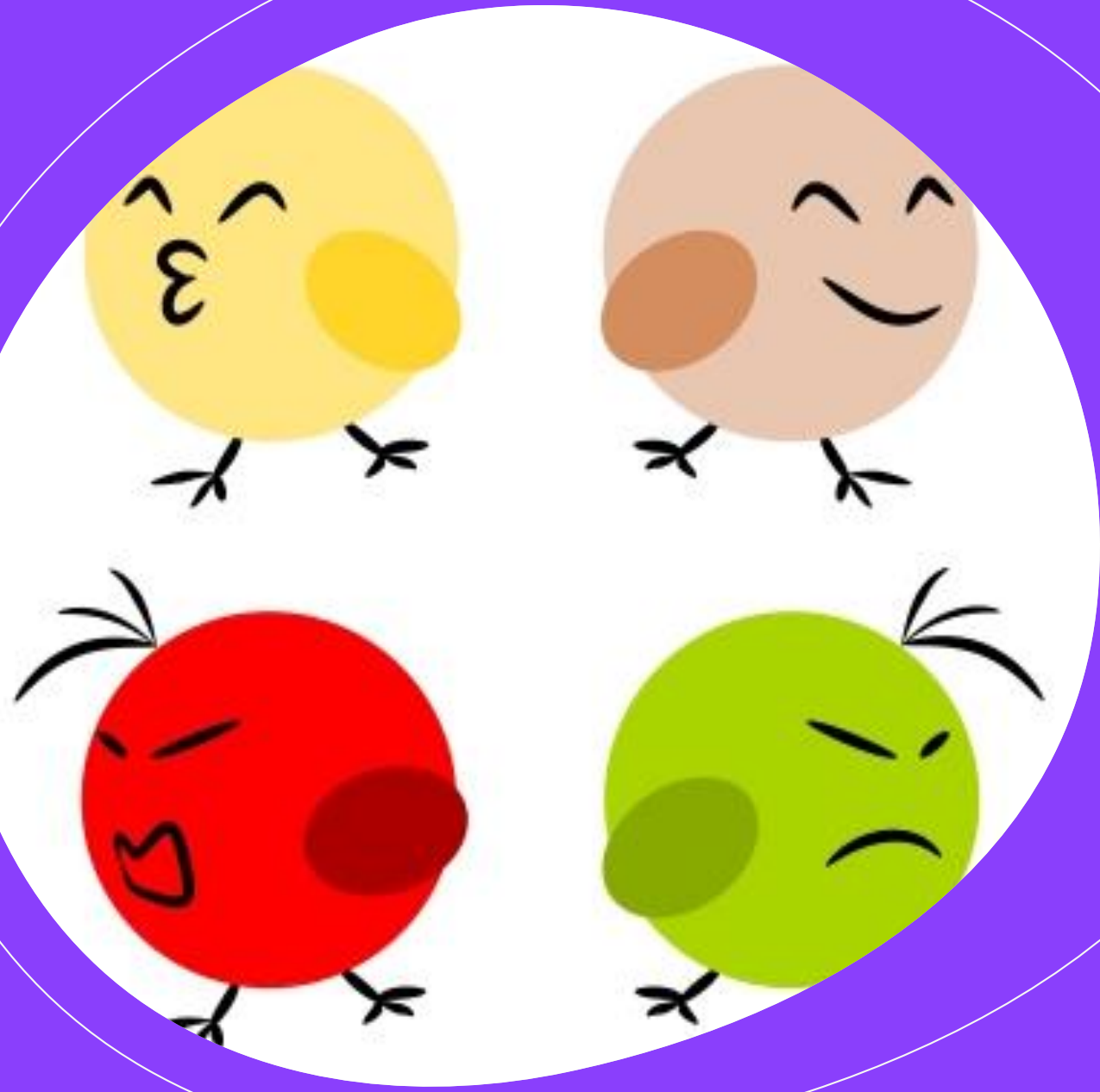
The facial-feedback theory of emotion is concerned with how our own facial expressions influence our own emotional experiences.
Research has shown how facial expressions can increase feelings of happiness or humor in accordance with the relevant muscle movement. A study by Strack et al (1988) [6] showed how participants who were asked to move their facial muscles into a smile (under the guise of a cover story that did not mention emotional responses), were significantly more likely to report higher levels of amusement in response to a cartoon than control groups.

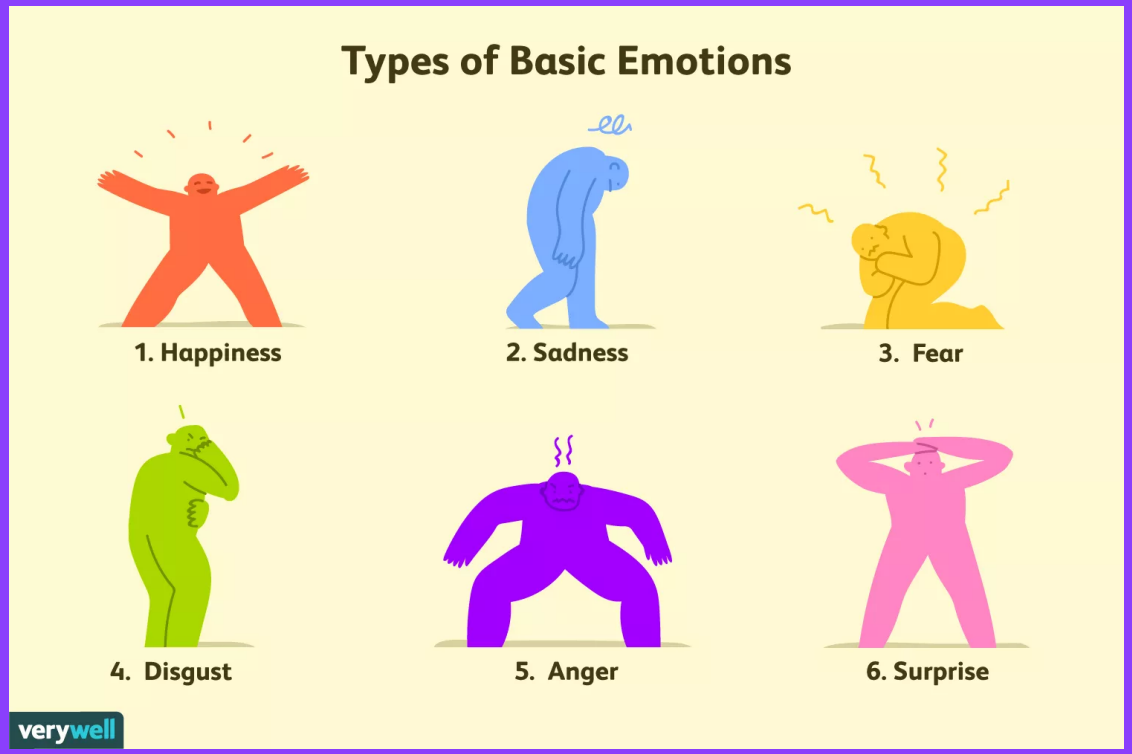
facial feedback hypothesis
Other studies have also investigated the same hypothesis. Participants in a study by Hennenlotter et al (2009)[7] had Botox injected into the muscles associated with frowning (the corrugator supercilii). They were found to exhibit relatively decreased activation of brain areas associated with emotional processing while attempting to frown, suggesting that the facial muscle movement accounts for at least some of the typical elicited emotion.

This goes to show the importance that facial expressions can have in our emotional lives – from our interpretation of other people's facial expressions to the experience of our own, they clearly play a big part in determining how we feel.



Emotions Classification



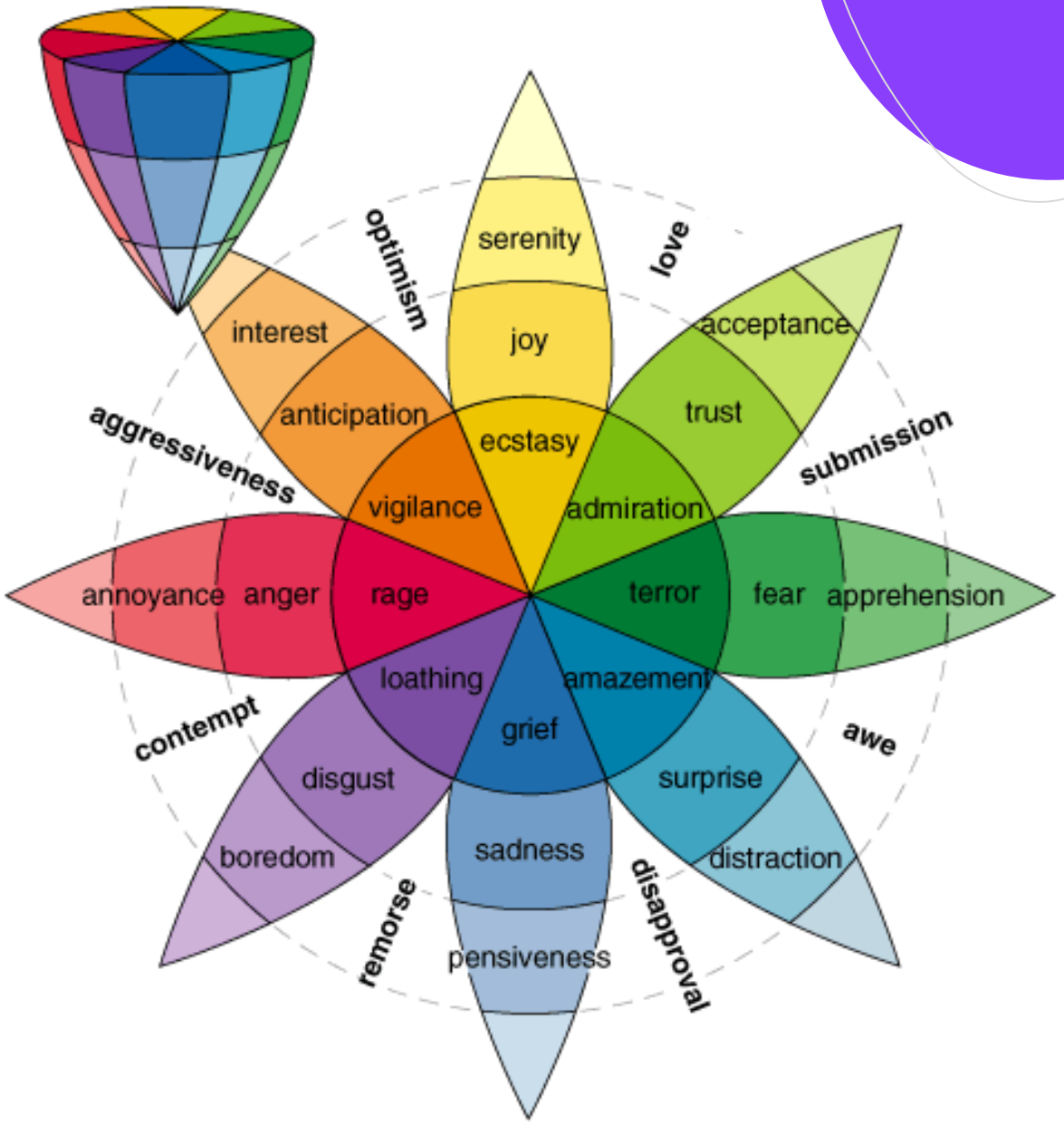


Basic Emotions

During the 1970s, psychologist Paul Eckman identified six basic emotions that he suggested were universally experienced in all human cultures. The emotions he identified were **happiness, sadness, disgust, fear, surprise, and anger.** He later expanded his list of basic emotions to include such things as **pride, shame, embarrassment, and excitement.**

Plutchik's model

Psychologist Robert Plutchik created the Plutchik Model shown above. It shows there are 8 basic emotions**: joy, trust, fear, surprise, sadness, anticipation, anger, and disgust**. Plutchik's wheel of emotions organizes these 8 basic emotions based on the physiological purpose of each. The model is actually the little "ice cream cone" which unfolds to the emotions wheel.



Interpreting Plutchik's Wheel of Emotions

Primary: The eight sectors are designed to indicate that there are eight primary emotions: anger, anticipation, joy, trust, fear, surprise, sadness and disgust.

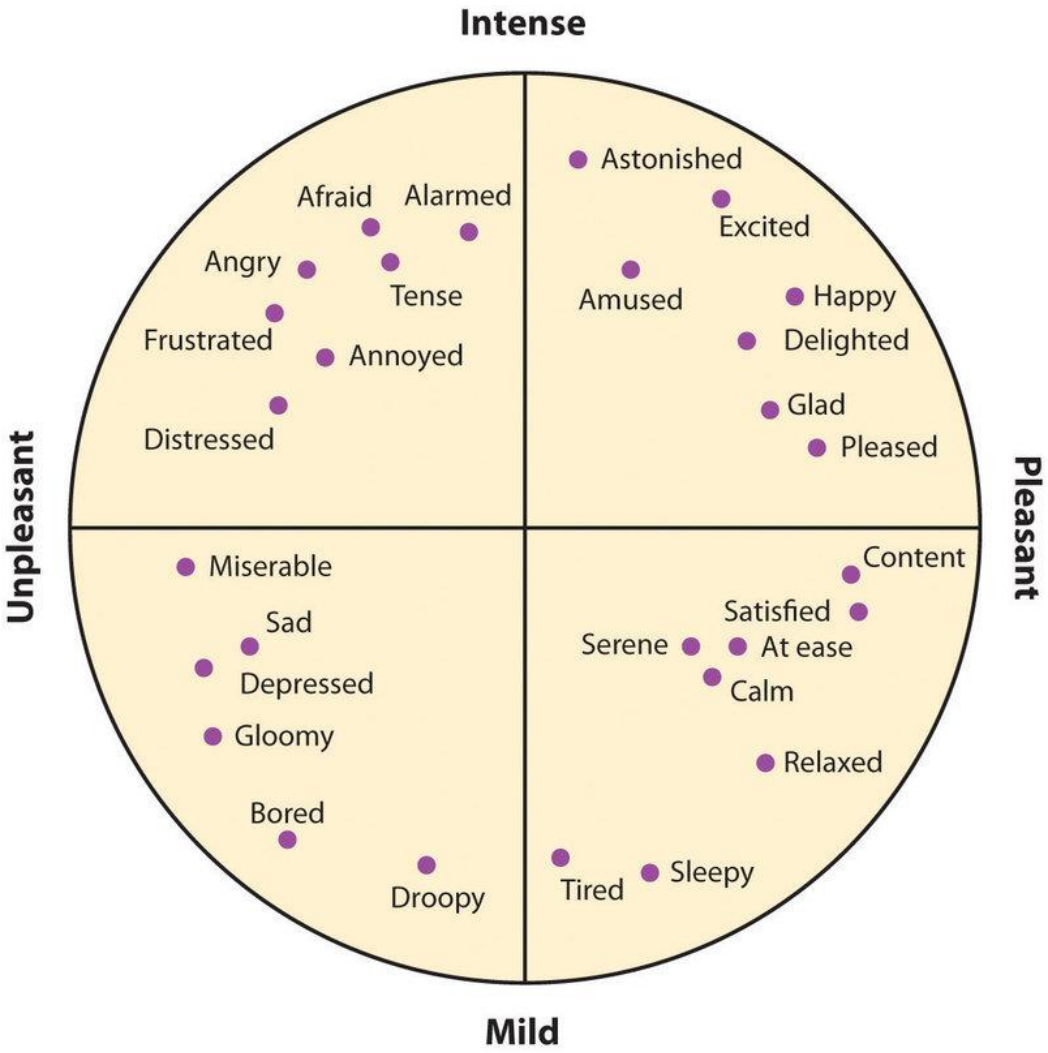
Opposites: Each primary emotion has a polar opposite. These are based on the physiological reaction each emotion creates in animals (including humans… Plutchik studied animals!):

Combinations: The emotions with no color represent an emotion that is a mix of the 2 primary emotions.

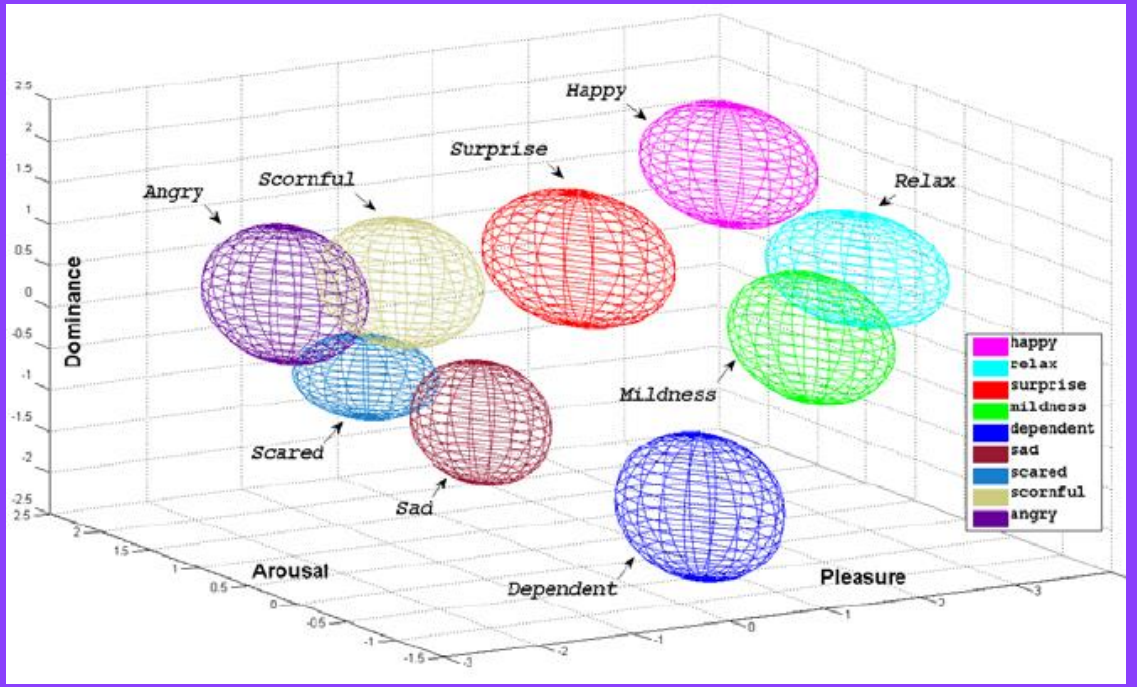
Intensity: The cone's vertical dimension represents intensity – emotions intensify as they move from the outside to the center of the wheel, which is also indicated by the color: The darker the shade, the more intense the emotion.

circumplex model

The circumplex model of emotion was developed by James Russell.[11] This model suggests that emotions are distributed in a two-dimensional circular space, containing arousal and valence dimensions. Arousal represents the vertical axis and valence represents the horizontal axis, while the center of the circle represents a neutral valence and a medium level of arousal.[10] In this model, emotional states can be represented at any level of valence and arousal, or at a neutral level of one or both of these factors. Circumplex models have been used most commonly to test stimuli of emotion words, emotional facial expressions, and affective states



The PAD emotional state model



The PAD emotional state model is a psychological model developed by Albert Mehrabian and James A. Russell (1974 and after) to describe and measure emotional states. PAD uses three numerical dimensions, Pleasure, Arousal and Dominance to represent all emotions.[1][2] Its initial use was in a theory of environmental psychology, the core idea being that physical environments influence people through their emotional impact

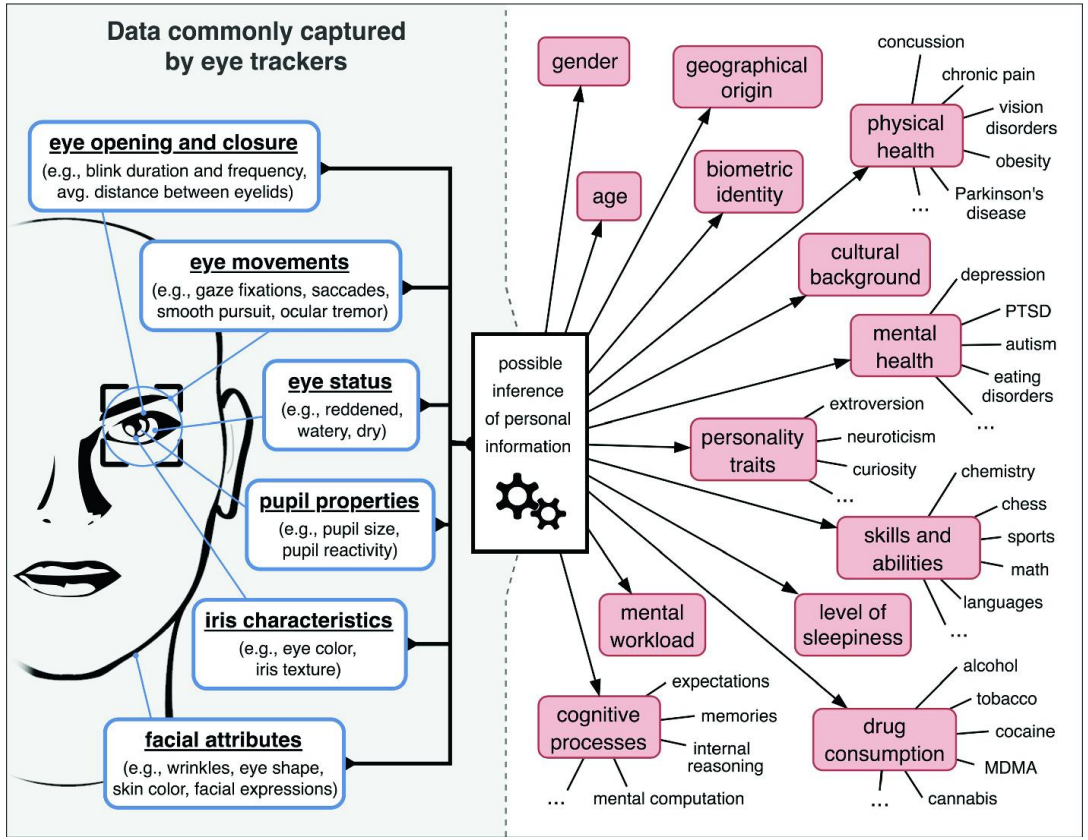
How to measure Emotions?

Emotions are physical and instinctive, instantly prompting bodily reactions to threat, reward, and everything in between. The bodily reactions can be measured objectively by pupil dilation (eye tracking), skin conductance (EDA/GSR), brain activity (EEG, fMRI), heart rate (ECG), and facial expressions.

Eye tracking

Light from infrared cameras is directed towards the participant's pupils causing reflections in both the pupil and the cornea. These reflections, otherwise known as pupil center corneal reflections (PCCR) can provide information about the movement and direction of the eyes.

Academic researchers use information about eye movements and fixations to assess attentional processes, compare group behavior, measure stimuli-induced visual responses, and mor



Facial coding

One of the strongest indicators for emotions is our face. As we laugh or cry we’re putting our emotions on display, allowing others to glimpse into our minds as they “read” our face based on changes in key face features.

Computer-based facial expression analysis mimics our human coding skills quite impressively as it captures raw, unfiltered emotional responses towards any type of emotionally engaging content. These expressed emotional states are detected in real time using fully automated computer algorithms that record facial expressions via webcam.

EEG – recording brain waves

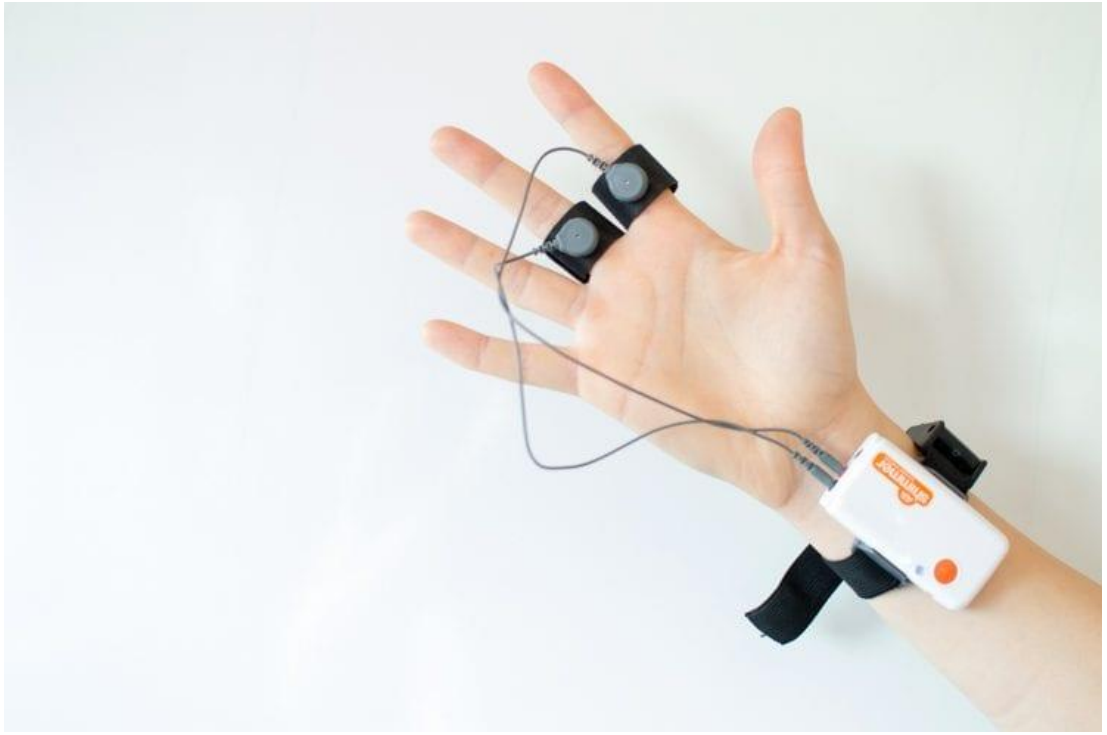
Electroencephalography records electrical activity using electrodes placed on the surface of the scalp and outputs this electrical activity as a series of underlying brain waves. Measuring electrical activity from the brain is useful because it reflects how the many neurons in the brain communicate with each other via electrical impulses, and how they are associated with cognitive processes such as drowsiness/alertness, wakeful relaxation, and approach or avoidance.

The most central element of EEG is its excellent time resolution. It can take hundreds to thousands of snapshots of electrical activity within a single second. This renders EEG an ideal technology to study the precise time course of cognitive and emotional processing underlying behavior.

What is Electrodermal Activity

Our level of emotional arousal changes in response to the environment we're in – if something is scary, threatening, joyful, or otherwise emotionally relevant, then the subsequent change in emotional response that we experience also increases eccrine sweat gland activity. This is what EDA / GSR devices capture when placed on the hands or feet.

Skin conductivity is regulated by the autonomic nervous system, which controls a number of bodily processes that can influence cognitive and emotional behaviors. EDA / GSR serves as a valuable index of emotional arousal as it offers insights into a respondent's underlying physiological and psychological processes.



What is Electrodermal Activity

FMRIB Centre Functional magnetic resonance imaging, or FMRI, works by detecting the changes in blood oxygenation and flow that occur in response to neural activity – when a brain area is more active it consumes more oxygen and to meet this increased demand blood flow increases to the active area.

The Paper

Title: Emotion and advertising effectiveness: A novel facial expression analysis approach

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Keywords:
Advertising
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Driving attitude
Facial recognition
Neuromarketing
Road safety campaigns

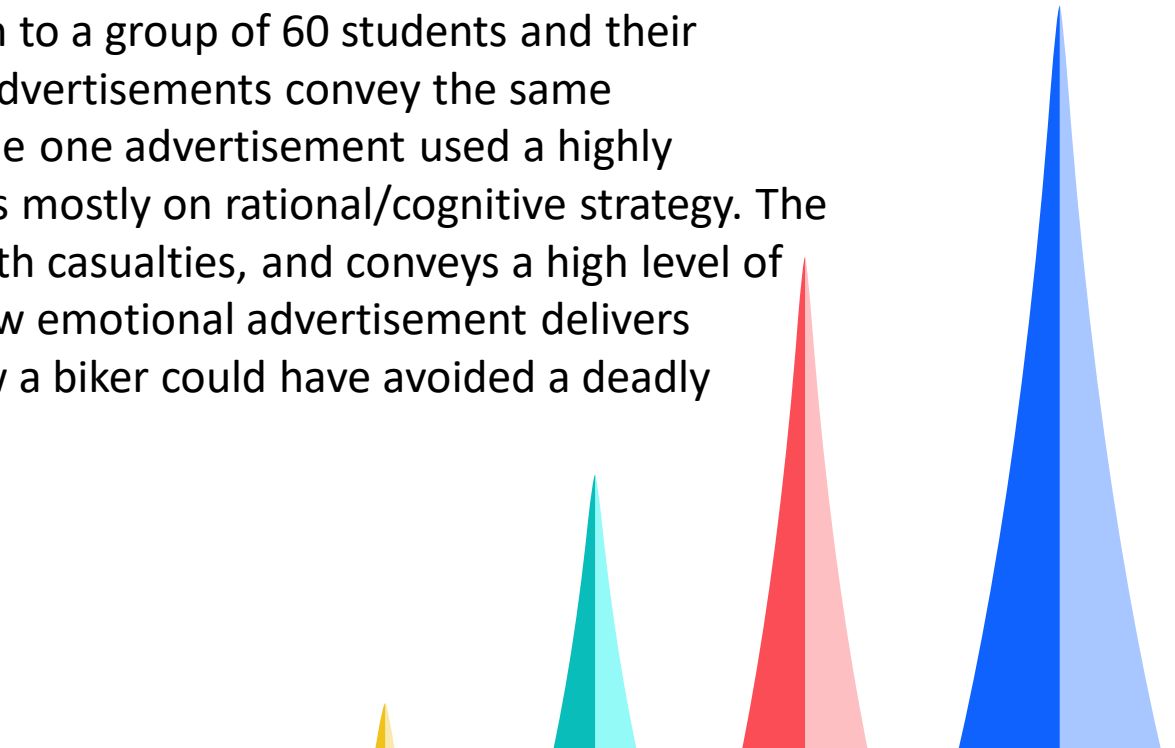
Abstract

Neuroscience has revealed the importance of emotion in the human cognitive process. For the first time, a GfKEMO Scan, a facial expression recognition software developed by the Fraunhofer Institute for Integrated Circuits IIs, is used to investigate the long-term effect of advertising on individual attitudes toward driving. The effects of high emotional and low emotional advertising were measured using the GfK-EMO software on 60 participants with a 50/50 male to female ratio. Each participant was subjected to either a high emotional or low emotional safe driving video advertisement. While watching the advertisement, the GfK-EMO facial recognition software recorded the unconscious emotions of participants who were also requested to fill a modified version of the National Survey of Speeding Attitudes and Behavior. A driving attitude score was then computed using this survey directly after the participant had viewed the advertisement and again two weeks later. Noticeable differences in the attitude score were recorded between participants having watched the high emotional advertisement against participants having watched the low emotional advertisement. The high emotional advertisement generated a higher and more durable safe driving attitude score in comparison to the low emotional advertisement.

H1. Response to emotional stimuli is not stereotypical, i.e. reaction to an emotional stimulus varies from respondent to respondent.
H2. Highly emotional advertisements, as oppose to low emotional advertisements, do not impact attitude variation over time.

Methodology:

Two safe driving advertisements from the UK were shown to a group of 60 students and their emotional reactions were recorded. Both public service advertisements convey the same message about the danger of speed and road safety. While one advertisement used a highly affective message strategy, the other advertisement relies mostly on rational/cognitive strategy. The high emotional video presents a dramatic car accident with casualties, and conveys a high level of negative emotions, including grief, fear and shock. The low emotional advertisement delivers scientific facts and the law of physics to demonstrate how a biker could have avoided a deadly accident by driving under 68 km/h.



Pilot study:

To test the emotional valence of each advertisement, a pilot study was conducted. Both advertisements were showed to a random sample of ten university graduate and undergraduate students, five males and five females. They were asked to rate their emotional experience. Eight participants out of ten described the car accident video as being highly emotional, while nine participants out of ten described the motorcycle video as low emotional. (Fig. 1).

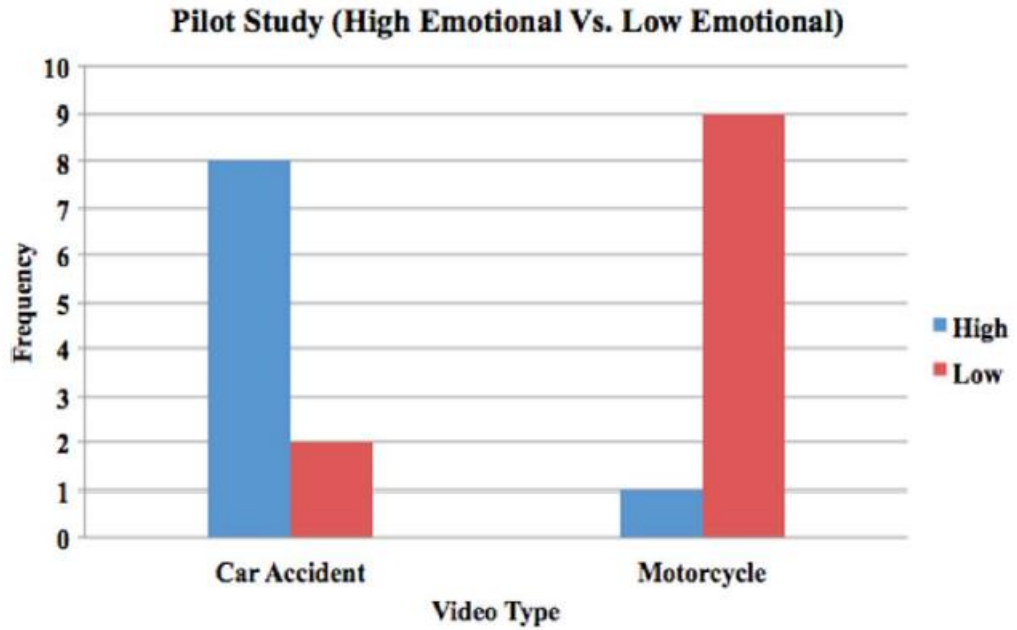


Fig. 1. Pilot Study to Categorize Videos.

Methodology:

group of 30 students, of which there were 15 males and 15 females, watched the high emotion advertisements, while the other group of 30 students (also 15 males and 15 females) volunteered to watch the low emotion advertisement. Directly after watching the advertisements, and again two weeks later, the students were requested to answer a survey adapted from the National Survey of Speeding Attitudes and Behavior (NSSAB). The survey was first conducted in 2011 to measure individual driving attitudes (Schroeder, Kostyniuk and Mack, 2013).

Results of the study, which were published by the US Department of Transportation, National Highway Traffic Safety Administration (NHTSA), show that drivers could be segmented into three distinct groups, of which 30% were peeders, 40% were sometime speeders, and the remaining 30% were nonspeeders. Demographically speaking, it was found that speeders were more likely to be higher income youn males in comparison to sometime-speeders and non-speeders. The results of the survey also tested phone usage (texting and calling) while driving. Alarmingly, the survey showed that speeders also tended to use their phones more often while driving than sometime-speeders and non-speeders.

The second survey that took place two weeks after the initial exposure to the advertisement was aimed at measuring the impact of emotions on recall and attitude change. The two-week time frame was chosen after a study by Di Vesta and Smith (1979) who showed that after being exposed to fairly meaningful materials, people tend to forget around 48% of this material after a two week period.

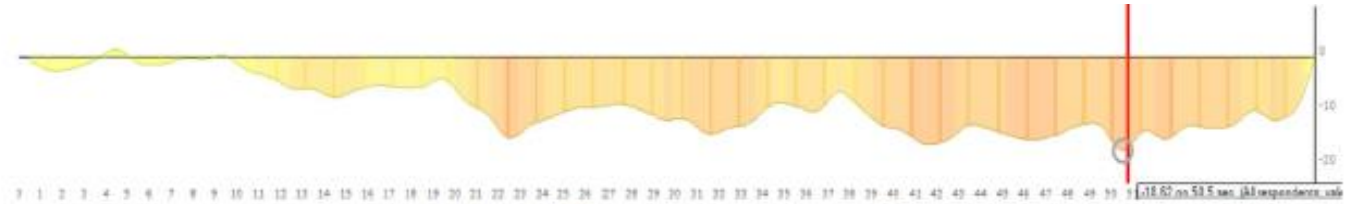


Fig. 2. HEV All-Participants Emotional Valence Peak Value.

Fig. 3. HEV High Emotional Scene (a).

Fig. 4. HEV High Emotional Scene (b).

Fig. 5. HEV High Emotional Scene (c).

Fig. 6. HEV High Emotional Scene (d).

Survey findings

All of the 60 participants filled in the survey. The survey asked the participants if they drove a car and if so which type of vehicle they drive most often. The majority (93.33%) stated that they most often drove a sedan-type car while 6.67% of the sample logged an SUV-type as the vehicle they drove most often. Participants were also asked to indicate their driving frequency. 38.33% of the sample drove every day or almost every day. 33.33% drove only certain times a year. 18.33% of the sample drove several days a week, while 10% drove once a week or less. The age categories of the sample are divided as follows: 68.33% of the sample is between 21 and 23 years old. 21.67% of the participants are aged between 24 and 26 years old. Respondents between 18 and 20 years old represent 3.333% of the sample, while 6.67% of the sample is above 26 years old and none were below 18 years old.

Survey findings

Rational driving score over time

Participants were asked to provide answers to 21 items using a 5- point Likert scale (Strongly Agree to Strongly Disagree). The sum of the21 items per participant helped assign a rational driving score (Maurer and Pierce, 1998). The calculated score is compared to the ideal score of 105 (calculated as the sum of best answers for all the 21 items). For the 30 HEV participants, scores of very little variation were recorded between the first survey (Survey 1) and the second identical survey (Survey 2) which was administered two weeks later. On the contrary, for the 30 LEV participants, a notable decrease in the safe driving score was recorded after two weeks

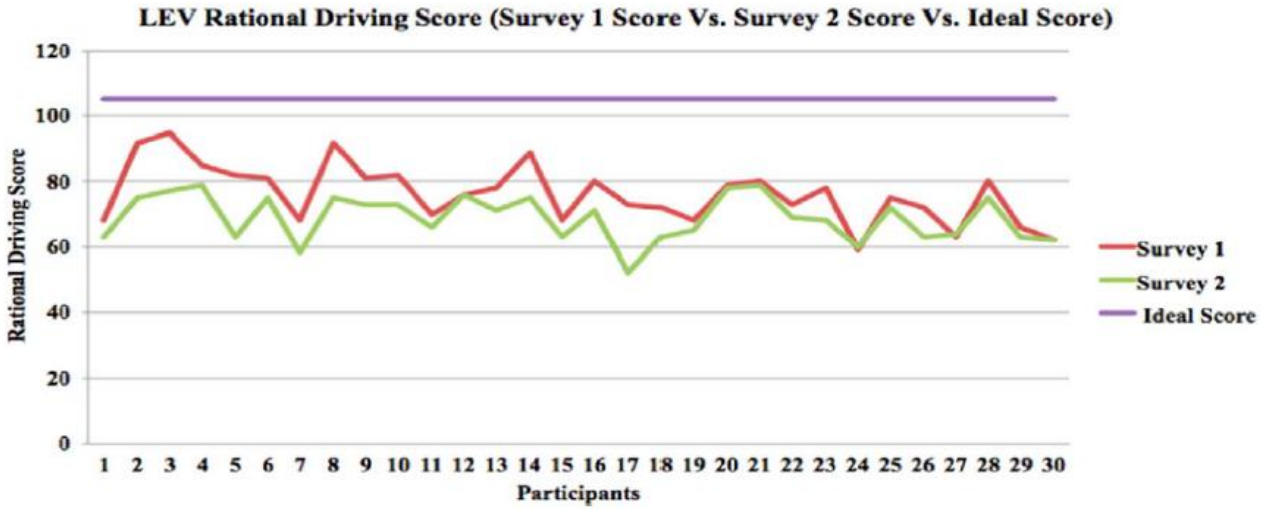


Fig. 11. LEV Rational Driving Score over Time.

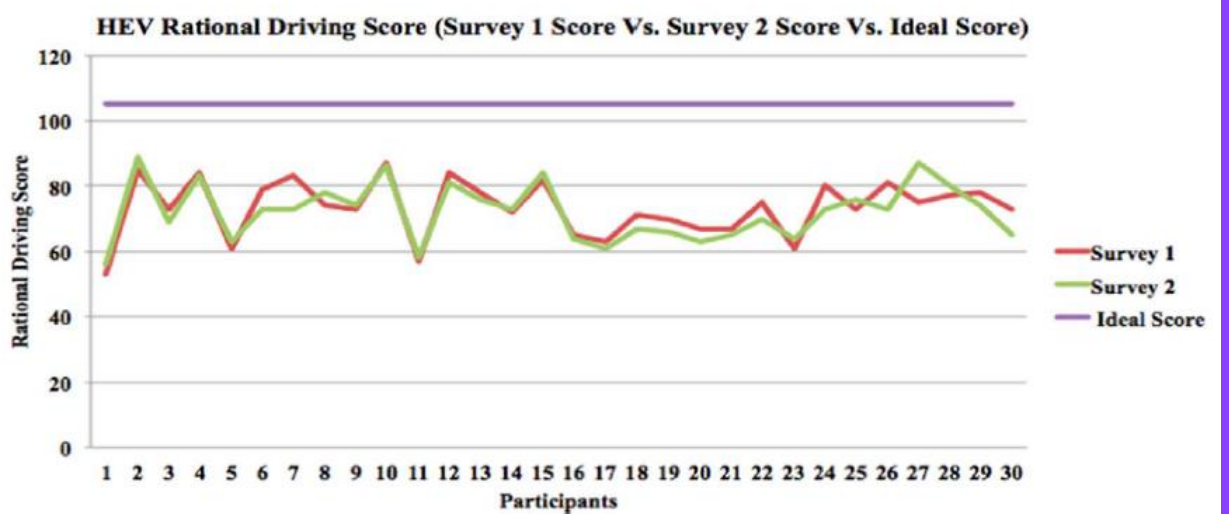


Fig. 10. HEV Rational Driving Score over Time.

Survey findings

Speed limit reinforcement over time

In addition to the rational driving score, participants were asked to determine the frequency by which police should reinforce the speed limit. The calculated score is termed Speed Limit Reinforcement, or SLR. While comparing the frequencies in “Survey 1” and “Survey 2”, it was detected that the 30 HEV participants responded with approximately the same frequencies in both stages, while the 30 LEV participants responded with lower frequencies in the second stage compared to the first stage of the survey.

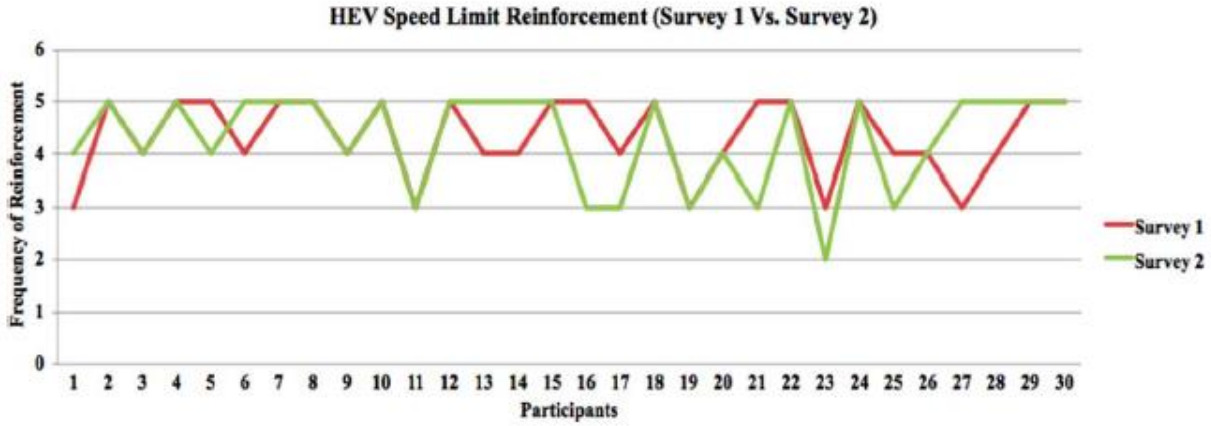
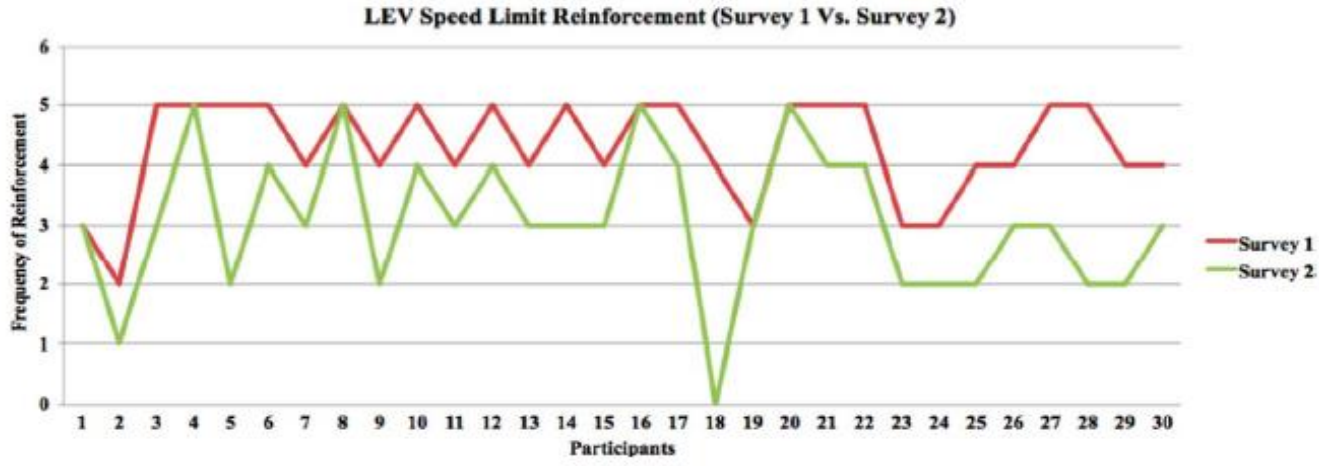


Fig. 12. HEV Speed Limit Reinforcement over Time.



Thank You!