

# Dementia and Alzheimer's Disease

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## Pupillometry reaction and its emotional relationship during bi-sensorial stimuli in University students

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This research, based on a study of neuro-physiological responses generated by emotional reactions, helps advertising agencies understand how they can use consumer neuroscience to develop more effective advertising campaigns. The study makes use of biometric tools which identify how specific stimuli can influence the consumer decision making process. Our aim is to enable agencies to use these tools on a daily basis to create more persuasive campaigns. With the globalization of brands and the need to remain competitive by understanding changing consumer preferences, it is increasingly important to have the right tools and to be able to execute new ways of positioning in the market. (Santesmaes, M. 1995).

This research has involved 52 university students and establishes the relationship between contingent alteration pupillometry with the multimodal (Video & Audio) and basic emotions – fear and happiness - stimuli which were exposed to the participants of this study. The identification of the type of the emotional response can determine if people will have a positive or negative response for a product or a brand affecting in a direct way the consumer making decision process for buying or consuming a specific product. Once the stimuli have been received by the nervous system it provokes neurophysiological and neuropsychological reactions that had been activated by the reward control system or the inhibitory control system that are located in the specific regions of the brain such as: nucleo accumbens and tegmental ventral area. These reactions are able to affect consumer's behavior related to the procurement decision process to acquire goods and services.

Measurement of the pupillary diameters after applying different stimuli can provide an explanation to the type of emotions that generates and identifies both the valence and the intensity of this perception that can be correlated with the

consumer decision and buying process, as well as his attitude toward life. The research has been done on a population of university students, 52 selected subjects, 13 men and 13 women with blue/green eyes and 13 men and 13 women with brown eyes. Filters regarding some characteristics of the sample were taken into account such as: health status, age (18 to 24), education level, eyes color, among others. The visual stimuli were taken from standardized and validated worldwide test such as TAT, CAT and Baron Cohen test. In addition, the auditory stimuli were taken from soundtracks of classic films on comedy or horror. The research methodology was mixed, with correlational and descriptive approach.

The preliminary information of the study suggests that there are some correlations between the type of the stimuli and the pupil diameter reaction. In addition, that the color of the eyes of the subjects is also a factor that should be taken into account at the moment of the evaluation of any kind of advertising. A deeper analysis of the database it's been analyzed and will provide new evidence about the time response of the pupil after the stimuli had been shown.

This work presents an opportunity for advertising agencies may have relevant information about consumer behavior when they are establishing communication strategies and the execution involves the usage of photographs or audios in their advertising material such as billboards, videos, tv commercials, posters, flyers among others.

### Speaker Biography

Santiago Restrepo is working as faculty of advertising, Corporación Universitaria Americana, GISELA Research Group in Medellín-Colombia. He is a psychologist, specialized in organizational psychology. He also completed his master's in Neuropsychology, Doctor in Neuroscience and Post-doctorate in Science.

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