



Department of: Business and Management

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Virtual Ambassadors, is this new trend changing the video advertising
landscape?

A preliminary analysis of the Renault Kadjar case.

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1. Introduction

Today's business environment is characterized by a fast pace technological implementation and always more innovations. Marketing is one of the fields where this transformation is more sound, machine learning is adopted for the analysis of big data, physical stores are always more equipped with in-store technologies and scientific methods are employed to test and monitor advertising. Speaking about the latter, the consequence that certain advertising campaigns, brands and products have upon people, from a mental and emotional point of view, is being assessed, utilizing neuroscience metrics.

By implementing neuromarketing methods, several commercial effectiveness indicators can be measured. Some of these metrics are memory retention, emotional engagement, purchase intention, awareness, novelty, and attention. Our decisions are mostly based on our emotions.

Emotional engagement is triggered by the arousal level. The more intense an experience is perceived, the stronger our emotional engagement level will be. This is one indicator of the way in which we respond to marketing stimuli and it can also help understand why we make certain purchase decisions. Together with emotional engagement, also the encoding level can influence the instant in which we decide to buy a certain product. The main method to study this process is by measuring brainwaves, while stimuli are being presented. The brainwaves form patterns that can indicate the successful memorization of a specific stimulus. A high degree of emotional engagement and a high level of encoding process activation can predict the purchase intention.¹

But, prior to the utilization of neuroscience methods to analyze the effectiveness of advertising campaigns on people, because emotions are both conscious and unconscious, a test through classical marketing research methods is opportune. Humans are by nature empathetic, empathy is the ability to understand or feel what another human being is experiencing, physically and mentally. For this reason, the research will be focused on advertising resembling people, but, not only real ones. This because we need to be aware that in these days, virtual representations of humans are always more common, for example in videogames, cartoons, and movies. Computer-generated imagery (CGI) technology is in continuous growth, together with natural language processing and the development of thinking computer systems these virtual entities are becoming always more realistic and involving.

This study will be centered on the analysis of ten interviews and an online survey where the respondents were asked to answer questions on their Attention and Arousal levels, after watching two different TV commercials powered by Renault. The two advertisings resembled a Virtual Ambassador (that we will discover ahead) and two normal actors at the drive of a car called "Renault Kadjar".

What if the virtual representations of humans became ambassadors of brands, with a pronounced personality and a relevant tone of voice? What if these virtual ambassadors are an effective marketing strategy that could

¹ Sebastian, V. (2014). *Neuromarketing and evaluation of cognitive and emotional responses of consumers to marketing stimuli. Procedia-Social and Behavioral Sciences*, 127, 753-757.

give a competitive advantage to companies? This research aims at being the starting point for answering these questions and understanding this new trend coming to life during our days, studying through self-reports its impact on emotions and the difference in perception between different generations. There are many things to consider when speaking about the possible advent of virtual ambassadors, one of these is the relevant marketing trends that are becoming always more real and forward-looking.

2. Marketing Online Trends

To introduce this research there is a pivotal path that we must follow. To begin with, it is important to outline the marketing online trends in modern society, understand clearly what a Virtual Ambassador is and the similarities and differences with “Influencers” and “Avatars”.

In 2019, marketing’s progression and evolution are in continuous acceleration. Various new trends are entering the markets scene, constantly improving the accuracy of campaigns and effectiveness of advertising. Artificial intelligence (AI) and machine learning are two of the hottest topics in marketing nowadays. With global leader firms like Amazon and Google investing resources in AI, this trend will not disappear any time soon. AI has multiple uses, most commonly in the marketing field it is used to analyze consumer behavior and search habits, exploiting data from social media platforms and websites to help companies understand how users discover their products and services. Based on the collected data, it enables marketers to anticipate probable patterns that their customers will follow in the future. Through the interpretation of these data, marketers can consequently understand how to better engage with their active customers utilizing different channels such as direct mail or digital advertising.

Hyper-personalization, another big trend in today’s marketing field, could be also improved by AI. Specifically, in the ecommerce industry, 86 percent of customers say that personalization is an important role in their buying decisions.² Companies use big data to predict their users’ demographics and behaviors, in order to create a more personalized experiences such as sending customized discounts or emails to trigger engagement.

The last trend that is very important to mention for the aim of this research, is booming of “Video Marketing”. Considering the fact that search engines are constantly updating to ensure user-friendly and engaging sites are being shown to users, firms need to adapt to these mutating algorithms to keep their rankings intact, it is proven that the utilization of videos in a marketing campaign is pivotal to keep the pace. Videos generate 1,200 percent more shares than text and images combined. Advertising only based on content works if it arrives not only in the place and at the time consumers wants it, but also in the format they want to consume it in, that’s why by 2021, video will represent 82 percent of all web traffic according to the Cisco Visual Networking Index.

² <https://www.digitaldoughnut.com/articles/2018/december/10-digital-marketing-trends-for-2019>

3. What is a Virtual Ambassador?

The word Influencer has become of very common use, incrementing the availability of recipients, the new media increase the possibility that the message is received. The role of the influencer is mainly to create awareness and signal benefits to others within their social network and can be particularly influential in encouraging the trial and adoption of novel products and services. The main platforms where influencers operate are Facebook and Instagram. Instagram is growing fast, continuing its expansion from 2017 and 2018. Although Facebook has still the greatest community, Instagram is rapidly reaching it. One of the most important differences is that the latter is loved by the younger generations, while Facebook is becoming mostly used by older ones. In the middle of the year 2018, Instagram declared that it had attained 1 billion monthly users reaching in 2019 the second billion. The community posts more than 95 million pictures and videos and 400 million stories daily.

Research studies found that influencer marketing is capable of triggering eleven times more return on investment than other more traditional forms of advertising annually. This added value that the influencer brings in terms of return on investments, is measured by analyzing engagement, reach and ultimately sales, proved by the existence of a positive association between the two. Consumers are usually far more inclined to positively relate and react to a message coming from a close friend over a sponsored post, empowered by a company. According to Nielsen, 92% of consumers believe recommendations from friends and family over all forms of advertising.

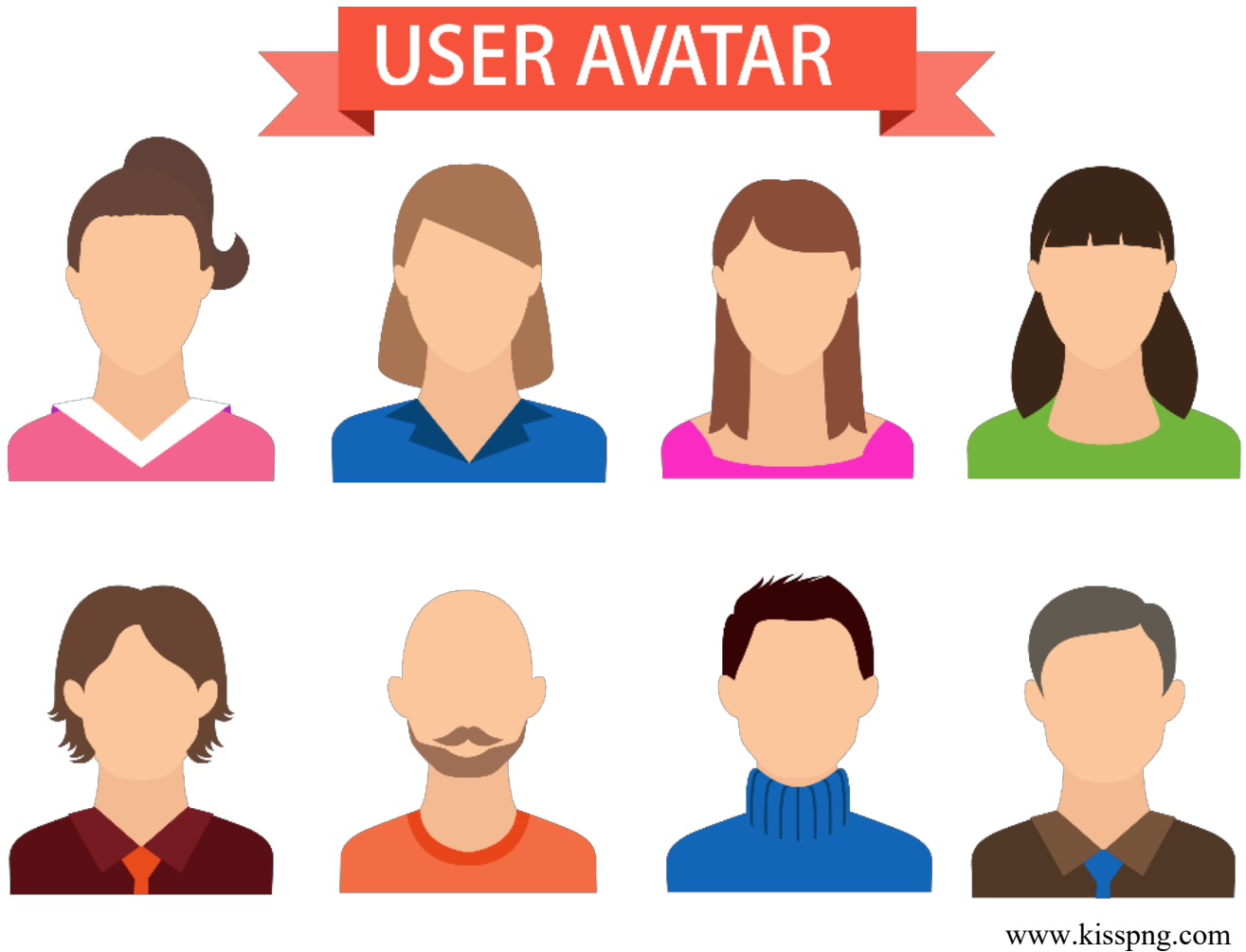
Blending the trust relationship that a potential consumer has with a friend and a large number of followers online, it is clear why marketers pay influencers to generate favorable posts about their products or services. They are an extremely important part of what the marketing of brands is nowadays, these marketing techniques are now vastly recognized in the advertising community and effective, for this reason, budgets for influencers campaigns are growing larger. Efforts to build and communicate favorable brand images constitute a sizable part of modern development strategies for brands.

Another key concept that deserves to be explained and reviewed is the concept of avatar. Survey research suggests that the most significant inhibitors of online shopping are the absence of pleasurable experiences, social interaction, and personal consultation by a company representative.³

A creative and functional approach with the aim of increasing customer satisfaction and information value of online shopping experiences is the use of “Avatars”. The word's etymology comes from the ancient Indian language, Sanskrit, and refers to “descent of a Hindu deity to the earth in an incarnate or tangible form,” from Sanskrit avatarana “descent” (of a deity to the earth in an incarnate form). This definition evolved during the years and today, in the age of technology, the word has developed another sense. It now describes the virtual image that a person shapes and/or chooses as his or her “embodiment” in an electronic medium.

³ (Barlow, Siddiqui, and Mannion 2004; G&J Electronic Media Services 2001)

“Avatars from the internet”



In marketing avatars are mostly used to enhance the internet shopping experience, improving the conversion rate of potential customers.⁴ Including an avatar during an online interaction between a computer and a human would make it feel more realistic and would enable the human to build also empathy towards the avatar. Recent evidence shows that relationships are more likely to develop if computer technology is represented using human forms. Thus, for example, adding an avatar to a decision support system on a retail Web site will increase the effectiveness of the Web site.⁵

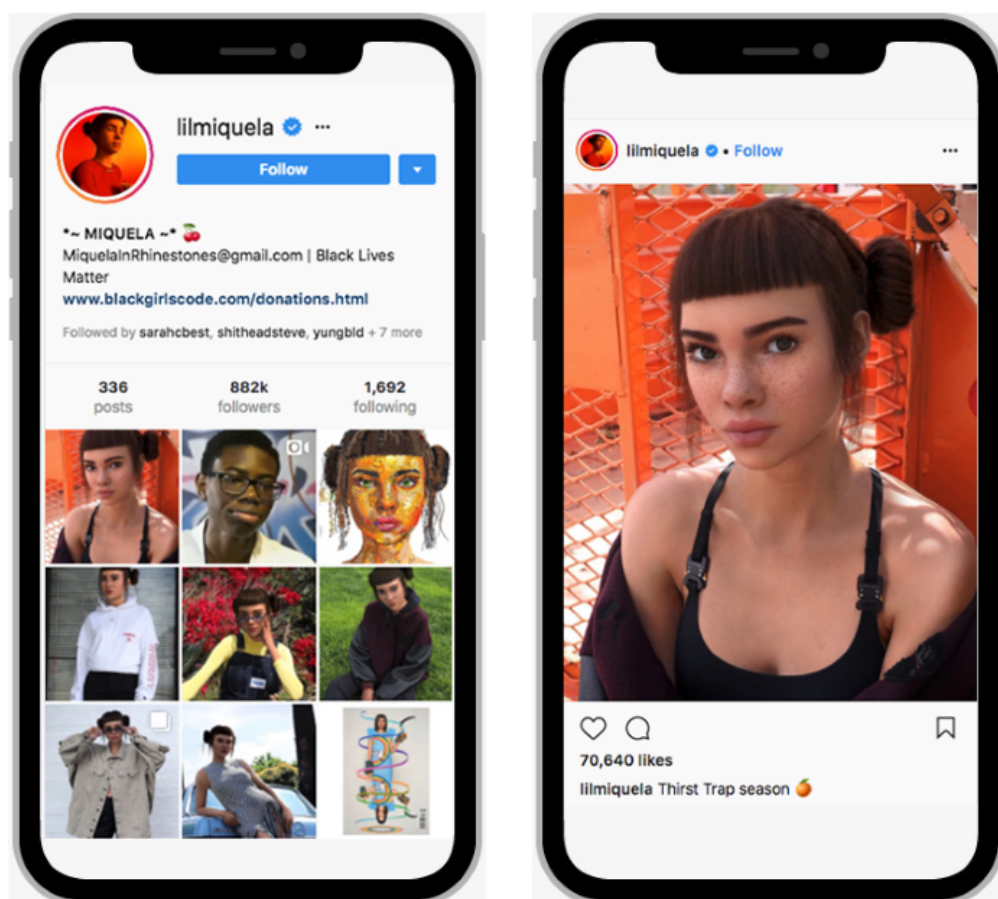
⁴ Brown, D., & Hayes, N. (2008). *Influencer marketing*. Routledge.

⁵ (Holzwarth, M., Janiszewski, C., & Neumann, M. M. (2006). *The influence of avatars on online consumer shopping behavior*. *Journal of marketing*, 70(4), 19-36).

Avatars may be used also as virtual personas representing the company. They can serve as identification figures, as personal shopping assistants, as Web site guides, or as conversation partners. In these roles, avatars have the potential to fulfill the consumer's desire for a more interpersonal shopping experience, anthropomorphizing the interaction and making the shopping experience more interpersonal.⁶

This being said, a modern and extremely plausible description of a Virtual Ambassador is the merge between an influencer and an avatar, a virtual entity with a personality and a look. In our days, where AI is becoming consistently more realistic and technology is permeating our daily lives always more crucially, there are different examples that may be brought up. A very close phenomena to the latter description is an Instagram virtual influencer called "Lil Miquela".

"Instagram's Lil Miquela"



www.flipboard.com

⁶ (Whitler 2014). Advertisers are trying to capitalize on this by communicating their messaging through social media influencers, who are trusted nearly as much as a friend. According to a joint study by Twitter and analytics firm Annalect, 56% of users surveyed said they rely on recommendations from friends, while 49% said they rely on influencers (Swant 2016). (Woods, S. (2016). #Sponsored: The Emergence of In2fluencer Marketing).

The main reason why Lil Miquela (1.5 Million followers to date) is referred to as a virtual influencer is because “she/it” is not representative of only one brand, but source of sponsored posts from different firms. Some of the partnerships of this famous CGI influencer have been with Giphy, Prada, Diesel and Moncler. This is an example of how modern technologies, can change the media sphere. The fascination that Lil Miquela generated on the Instagram community was very high since not long after the account launch in April 2016, for her first two years, no one managed to identify who or what was behind the project. The Bermuda hack-slash-PR-stunt solved at least part of the mystery, linking Miquela to Brud, a Los Angeles-based startup that specializes in “robotics, artificial intelligence and their applications to media businesses”, but the entire saga remains a master class in postmodern performance art. Adriani, R. (2019).⁷

“Imma Instagram Virtual Influencer”



“www.futurism.com”

Looking at the picture above, can you guess which of the three models is virtual? It is very difficult to understand that Imma the virtual influencer is the model placed in the center. She is a self-described virtual model younger than Lil Miquela, that in less than a year of activity ranked up over fifty-thousand followers on the famous social network. Created by the Tokyo based CG company Modeling Café, she managed to get the first collaborations with Japanese brands Kate Cosmetics and continues to grow.

⁷ (The Evolution of Fake News and the Abuse of Emerging Technologies. In 17th International Conference on Social Sciences Murcia, 8-9 March 2019 (p. 143))

There are also other honorable mentions to be made, for example, “AI Angel”, a virtual YouTube teenager created with advanced Artificial Intelligence techniques enabling her to interact in a “sentient” way with real people and new totally CGI/3D built movies like “Alita: The Battle Angel”, that had a huge online resonance. Famous fashion brands are also starting to employ virtual humans in their advertising. Proof of this is the very recent Instagram ad by Diesel, which, in collaboration with the famous videogame “Days Gone”, created a line of clothing and advertised it through pictures of avatars of their models in a virtual world.

“Instagram Diesel Ad”



“www.instagram.com”

The innovations that we just discussed may raise multiple compelling questions. When speaking about marketing, we may ask ourselves: What if the brand ambassador of a company is a non-existing person? What if a virtual profile AI based becomes more emotionally stimulating and exciting than a real person? Can a virtual ambassador possess a distinct personality and accurately portray the company’s image? Which younger generations could potentially be more attracted to a 3D modelled testimonial?

This will be the focus of this research, more precisely our analyzed character will be “Liv”, Renault’s new virtual ambassador. But, before explaining who she is, a review the marketing evolution of this French multinational automobile manufacturing company is necessary

4. Renault's Marketing Strategy

“When you think of us you probably think about iconic cars, an international company bolstered by the world's leading automotive Alliance, Formula 1 victories and futuristic concept cars.” Renault Team.

Groupe Renault is a French automobile manufacturing company, known for its innovative design and accessible pricing. The firm was established in 1899 in Boulogne-Billancourt, a small French town near Paris. Renault has been ranked in 2016, the 9th world's largest automobile manufacturer based on production volumes. The company has multiple ventures at present, its most successful partnership is the Renault, Nissan and Mitsubishi Alliance. The group designs, develops, manufactures and sells private cars. It sells vehicles under three main brands: Renault, Renault Samsung, and Dacia. Present in the world, Renault sells its vehicles in 118 countries and manufactures these ones in 18 countries, closer to its markets (especially in growth regions such as Russia, India and China).⁸

Like Renault many firms are developing fundamental changes in their overall organization to increase their efficiency and effectiveness, production and business wise. This firm implemented a transition, from a classical type of functional organization in 1960, to a structure more aimed at project coordination in the 1970's and has started to develop strong project teams for implementing autonomy and power since 1989, until today where the company is continuously searching for new and young initiatives.⁹

Its marketing mix has always been forward looking and innovative. Renault has always succeeded for what regards meeting the technological challenges, creating a product portfolio that is to be envied. The company offers a wide range of products, both in Europe and Internationally. Renault produces its vehicles and chooses its marketing, based on a meticulous study of the different markets, keeping in mind diversities and creating unique new vehicles from region to region.

Recently, the company has made important investments, together with Nissan, in the electric automobile segment. This will of producing “green vehicles”, rejuvenated its image associating it with sustainability and environment friendliness. Moreover, in 2013, the Renault engines had the lowest carbon dioxide emissions in Europe. Throughout its history, the firm has been credited with several innovations that include, the direct drive gear implemented in year 1899 and the real-time system for weather information and location (called Carminant) in year 1988.

The manufacturing units of Renault have been mostly based in the native region. Europe alone is about 75% of the total manufacturing units across the world. Renault has extended its base to other countries, as well as design units have been set up in Asia, Africa, and South America to cut costs and reach out markets.

⁸ Midler, C. (1995). “Projectification” of the firm: the Renault case. *Scandinavian Journal of management*, 11(4), 363-375.

⁹ Midler, C. (1995). “Projectification” of the firm: the Renault case. *Scandinavian Journal of management*, 11(4), 363-375.

The pricing strategy of Renault is based on an accurate segmentation and targetization, together with the study of competition. A research team carries out market research about the spending habits of the consumers and the market position setting the prices before making its decisions. Some of its main targets are families, young executives, and businessmen. The company has positioned itself as a brand that is offering a wide range of products that would suit every individual.

Renault has developed an all-around marketing strategy that aims at taking advantage of every tool at disposal, to generate always better visibility. It has launched various ad campaigns through many different channels. We can see Renault's publicity in magazines, billboards, hoardings, motor shows, rallies and public displays. The brand is well aware of the pivotal importance of social media platforms and employs them to displays advertisements, product details, and relevant information via its official website.

“Renault France Facebook”



“www.facebook.com”

5. LIV, Renault's Virtual Ambassador

“This is Renault's raison d'être. We have always built vehicles to suit people's real life, to simplify it but also magnify it... 'Passion for life', our brand signature, is the demonstration of this. That's why we are now continuing to embark on the launch of our new SUV model, the Renault Kadjar. And what better than a virtual ambassador to feel real behind the steering wheel of this vehicle and show the authenticity of the actual experience?” Gaëlle Le Grouiec, Renault's marketing communication director Europe G9.

In the digital era that all of us are living, especially for the younger generations, lives are being split in two the virtual social media life and the real one. To make this affirmation more than a hypothesis these are some of the key takeaways from the Global Digital Report of 2019:

- The number of internet users worldwide in 2019 is **4.388 billion**, up 9.1% year-on-year.
- The number of social media users worldwide in 2019 is **3.484 billion**, up 9% year-on-year.
- The number of mobile phone users in 2019 is **5.112 billion**, up 2% year-on-year.¹⁰

However, there is an always more widely spread social trend, which is the desire to share the authenticity of real lives on social media platforms. So, we can safely say that the line between the real and the virtual life is always more blurred, and the two worlds are interconnecting.

The famous sociologist Stéphane Hugon affirmed that: *“People have long contrasted relations with what is real and what is virtual. We differentiate between true and false, light and shade, etc. A whole area of our culture is founded on this point”*, according to him this duality will soon be over.¹¹

Renaults challenge was to create an advertising campaign, for the SUV called “Kadjar”, that had as its ambassador “Liv”. They brought Liv to life enabling their objective to become reality. She is a virtual woman protagonist of Renault’s publicity, in this campaign she will be faced with an authentic driving experience, gradually becoming increasingly alive and more human. Renault wants to connect the virtual world with the real one, through this very innovative marketing strategy, being the first to create a virtual ambassador in the automotive market. By launching this forward-looking campaign, the aim is to prove the extent to which the onboard experience and feelings are authentic, exhilarating and thrilling, and that even though Liv is entirely virtual, the experience itself is completely real and extremely rewarding.

At the beginning of the advertising, the virtual ambassador appears with dull, absent eyes, but, when she begins experiencing the exciting drive at the wheel of the Kadjar, she gradually starts changing. The eyes become brighter, more vivid and energetic, also the face from a static, eventually lights up with vitality and more than real facial expressions. The title of the ad is not by chance "Escape to Real".

It is not the first time that Renault’s marketing tries to promote the SUV to the general public, utilizing a storytelling rich of thrilling adventures and emotions. Indeed, on May 23rd, 2018, together with the release of the movie "Solo: A Star Wars Story" in Italian cinemas, they launched a European-wide innovative advertising campaign in collaboration with Lucasfilm, Disney, and Publicis Conseil.¹² Combined with this initiative, also two contests were created with Disney. One gave the possibility to win Star Wars gadgets playing on the website dedicated to cars and the other to win a trip where the movie was shot, by booking a Kadjar test drive.

¹⁰ <https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/>

¹¹ Mitchell, W. J. (1994). *The reconfigured eye: Visual truth in the post-photographic era*. Mit Press.

¹² <https://giodit.com/2019/01/26/la-prima-virtual-ambassador-dellautomotive-nello-spot-di-renault/>

This reflects the choice of positioning the brand on the market as innovative and close to the people, managing to understand their tastes and needs.

Liv's creators, in addition to creating her visually, they also gave her the ability to interact with people. She was posed different questions, to which she responded giving the impression of being a sentient human, *"Hello, my name's Liv. I'm virtual, created in minute detail from scratch by Renault to experience real emotions. I'm not sure about my age, so I'd prefer not to talk about that. I believe I increasingly love traveling. I've recently realized this. I hope to be able to continue to develop my passion. You know, I've got complete knowledge of the world because I'm virtual! But in the end, what does all this knowledge matter without experience?"*, matching the personality and tone of voice of the brand she also promoted the vehicle and the advertising campaign, *"Liv means 'life'. Renault is all about 'life with passion', it's at the heart of everything this brand creates, and the Renault KADJAR is the vehicle of excellence for you to live all your passions, to accompany you wherever you wish...So, it's quite natural for me to embody that passion."*¹³

"LIV and Renault Kadjar"



RENAULT

KADJAR

"www.youtube.com"

¹³ <https://lbbonline.com/news/meet-liv-renaults-unnerving-new-virtual-ambassador/>

6. Research

The aim of my preliminary research employing the use of classical marketing methods is to investigate on how respondents consciously interpret their emotions and attention when watching an advertisement. The first metric that I wanted to analyze is Attention.

6.1 Attention (H1)

“Attention grabbing billboard ad by Ikea”



“www.trendhunter.com”

Theories regarding attention, for instance, capacity theories from Broadbent 1971 and Kahneman 1973 as well as information-processing models (e.g., Greenwald and Leavitt 1984; MacInnis and Jaworski 1989), take in consideration that the attention to an ad is a function of consumers’ MAO (motivation, ability, and opportunity).¹⁴ These three key factors are influenced by consumers’ characteristics and the physical properties of the commercial. Physical ad properties, such as illustrations, headlines, characters, music, colors, and products, are deemed to play a pivotal role in captivating consumers’ attention. Insights and data regarding the effect of the physical properties of an advertisement on attention are poor, most of them are based on research using memory measures. The persuasiveness of media depends on the active processing efforts of the viewers, Herbert Krugman on his “Public Opinion Quarterly”, 1965, outlined the fact that there are two

¹⁴ Zacks, R. T., & Hasher, L. (1988). Capacity theory and the processing of inferences. *Language, memory, and aging*, 154-170.

different ways of being influenced and experiencing advertising media. One is characterized by the absence or lack of involvement and the other by a high amount of the latter, meaning the number of significant experiences, connections and personal references that a given person makes between their life and the stimulus presented. A repetition paradigm was used to assess the nature of affective modulation of early and late components of the event-related potential (ERP) during picture viewing.¹⁵ With a low involvement, a viewer could be more stimulated by repetition activated by behavioral choice situations. With high involvement instead, one could look for the deeper connections stemming from conflicts of ideas at the level of conscious opinion and attitude.¹⁶ Following this distinction, it has been stated that both types of involvement can be associated with an effective way of building advertising, depending on the strategy that the firm wants to follow.¹⁷

It is also for this reason that better indicators than memory scores are needed for testing attention to advertising, so memory research cannot be easily generalized to the domain of attention to advertising. Individual differences between subjects are likely to moderate this impact as shown by the research of Shanteau 1983. Previous research has reported substantial differences in overall attention to advertising among consumers, testing various hypotheses regarding the effect of intrinsic and situational causes of personal importance on involvement and on the amount of attention, focus, and cognitive elaboration. Felt involvement is a motivational state that have an effect on the extent of consumer attention.¹⁸ This suggests that segments of consumers may respond differently to the physical properties of advertisements.¹⁹ There is an important distinction to make clear when speaking about attention. Most neuroscientists and researchers agree that the perceptual analysis of the visual world takes place in two subsequent stages (Neisser, 1967). There are two types of visual attention called: pre-attentive and post-attentive attention.

Pre-attentive attention is automatic and parallel, it works on low-level stimulus features with the primary function of delineating objects in the spatial surrounding.²⁰ It segments the field into separate objects on the basis of such Gestalt properties (The Gestalt Principles of grouping, “Gestalt” is German for “unified whole” represent the culmination of the work of early 20th-century German psychologists Max Wertheimer, Kurt

¹⁵ Codispoti, M., Ferrari, V., & Bradley, M. M. (2007). Repetition and event-related potentials: distinguishing early and late processes in affective picture perception. *Journal of Cognitive Neuroscience*, 19(4), 577-586

¹⁶ Krugman, H. E. (1965). The impact of television advertising: Learning without involvement. *Public opinion quarterly*, 29(3), 349-356.

¹⁷ Greenwald, A. G., & Leavitt, C. (1984). Audience involvement in advertising: Four levels. *Journal of Consumer research*, 11(1), 581-592.

¹⁸ Celsi, R. L., & Olson, J. C. (1988). The role of involvement in attention and comprehension processes. *Journal of consumer research*, 15(2), 210-224.

¹⁹ Rosbergen, E., Pieters, R., & Wedel, M. (1997). Visual attention to advertising: A segment-level analysis. *Journal of consumer research*, 24(3), 305-314.

²⁰ (Duncan, J. (1984). Selective attention and the organization of visual information. *Journal of Experimental Psychology: General*, 113(4), 501.)

Koffka and Wolfgang Kohler, who sought to understand how humans typically gain meaningful perceptions from chaotic stimuli around them) as spatial proximity, continuity of contour, shared color or movement.²¹ Postattentive attention is slow, serial and it concerns more complex inferential and interpretative processes, identifying the located objects in perceptual awareness. When we encounter peripheral significant events ongoing processing may be interrupted and postattentive processing may be prioritized (Ohman, 1979). This stimulus-driven call for processing resources is associated with phasic psychophysiological activation manifested as orienting responses, which facilitates further sensory processing of the stimulus.²² It focalizes on a particular object more in detail and thus is responsible for our limited ability to see several objects at once.

Theory by Treisman & Schmidt, 1982, found out that focused attention is required for the correct combination of features of complex objects when several of these objects are presented in an unpredictable context. This is called feature-integration theory, it explains that when an individual is overloaded with visual information, features may be understood in a wrong way giving rise to the so-called “illusory conjunction”, experienced among unsupervised stimuli that vary in shape and colors.²³

Separable features are registered in parallel across the visual field, independent from one another. When objects must be identified and no contextual cues are available to select the expected combinations of features, a correct synthesis can be achieved only by focusing attention on one location at a time.²⁴ Aspects that co-occur in an individual fixation of attention are put together to form an object. If attention is overloaded, the features may be incorrectly recombined, forming "illusory conjunctions". Illusory conjunctions are combinations of connected perceived features like colors and shapes. They occur using brief exposure to stimuli (under 200 ms). This notion was introduced by Treisman and Schmidt (1982) with the following example: “A friend walking in a crowded street saw a colleague and was about to call him when he realized that the black beard belonged to another person passing by, and the shaved head to another”. This perceived features of the person were incorrectly recombined to form an illusory face. Their theory of feature integration outline that the diverse elements of an object are identified in parallel and automatically, while actual object recognition takes place only after the different elements have been put together sequentially. To conjoint the different elements focused attention is required. If attention is not focused, elements that have been correctly identified may be incorrectly combined to form illusory conjunctions.²⁵

²¹ (Öhman, A., Flykt, A., & Esteves, F. (2001). *Emotion drives attention: detecting the snake in the grass*. *Journal of experimental psychology: general*, 130(3), 466.)

²² (Öhman, A., Flykt, A., & Esteves, F. (2001). *Emotion drives attention: detecting the snake in the grass*. *Journal of experimental psychology: general*, 130(3), 466.)

²³ Treisman, A., & Schmidt, H. (1982). *Illusory conjunctions in the perception of objects*. *Cognitive psychology*, 14(1), 107-141.

²⁴ Treisman, A. (1982). *Perceptual grouping and attention in visual search for features and for objects*. *Journal of experimental psychology: human perception and performance*, 8(2), 194

²⁵ Prinzmetal, W., Henderson, D., & Ivry, R. (1995). *Loosening the constraints on illusory conjunctions: Assessing the roles of exposure duration and attention*. *Journal of Experimental Psychology: Human perception and performance*, 21(6), 1362.

The channel where the commercial in analysis is mostly divulged is Television. TV is a dynamic audiovisual medium that provides space for the presentation of information to a big share of the population touching most of the generations. Communication research suggests that an audiovisual format may present a unique aspect of information presentation because of the interaction between visual and verbal display. More in detail some characteristic of animation, such as visual action, fast pace, and sound effects, have consistently proven to increase attention in younger generations.

Researchers have suggested that the attention-attracting ability of audiovisual information relates to the complexity of the message stimulus (Wartella and Ettema 1974; Watt and Welch 1983; Welch and Watt 1982).²⁶ Visual complexity typically refers to the number of objects or movement of objects in the visual field (Alvarez et al. 1988; Huston et al. 1981; Watt and Welch 1983; Welch and Watt 1982). Auditory complexity is often conceptualized as the number of changes in the level of frequencies, as well as the number of different sounds heard on the channel (Thorson, Reeves, and Schleuder 1985; Watt and Welch 1983). Complex stimuli are more perceptually salient, so they can more effectively captivate younger generations' attention. Animated advertising has the possibility to be more attractive for vivid colors, fast movements and sound effects associated with animation embody perceptual salience. The high level of perceptual salience may explain why an animated character associated with a product is likely to draw the attention of younger people.²⁷

Thus, having analyzed attention and its application in understanding advertising effectiveness, I decided to develop the first hypothesis to understand the perception that respondents have on the two Renault commercials.

H1: The attention will be higher for respondents who watch the Virtual ambassador advertisement, rather than the Real Humans one.

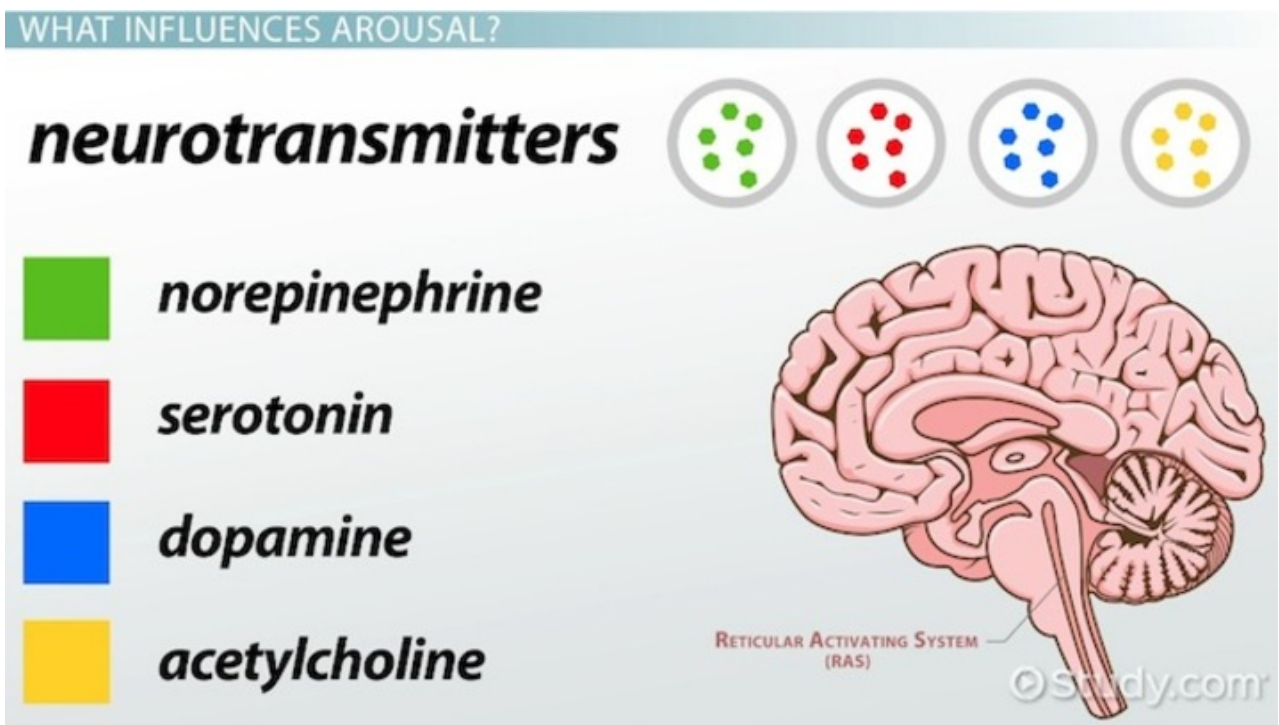
Not only video advertising, but advertising in general should aim at establishing an emotional bond with the viewers. The likeability of a commercial may be dictated by different factors, one of these is the level of Arousal triggered by the latter. Thus, I was interested in understanding if respondents would demonstrate through a self-report, that they felt more emotionally charged watching the Virtual ambassador advertisement rather than the one with Real Actors.

²⁶ Welch, A. J., & Watt Jr, J. H. (1982). Visual complexity and young children's learning from television. *Human Communication Research*, 8(2), 133-145.

²⁷ Neeley, S. M., & Schumann, D. W. (2004). Using animated spokes-characters in advertising to young children: Does increasing attention to advertising necessarily lead to product preference?. *Journal of Advertising*, 33(3), 7-23.

6.2 Arousal (H2)

“What influences Arousal?”



“<https://study.com/academy/lesson/arousal-in-psychology-definition.html>”

Arousal has been classically defined in different ways, it has been seen as the tension, activation, energization or alertness of the inner state. Activation is a basic variable of human behavior, it gives energy to the organism and it is responsible for its motor and physiological activity. In neurophysiological theories activation is described as the result of physiological processes that appear in the central nervous system. Arousal is raised by stimulating a subcortical unit of our brain known as the reticular activation system together with the correlated limbic system, both located in the brain stem.²⁸ It has been defined also as some elevated state of bodily function, representing a nonspecific increment in physiological activity²⁹ and as a state of wakefulness, general preparation, or excitement that facilitates the performance of well-learned responses. In terms of neuroscience it has been defined as a diffuse and general state of cortical alertness following sensory stimulation or some internal thought process. All of the former definitions have in common that arousal is a mental and physiological activation of the organism.

An important characteristic that is necessary to underline when speaking about emotional responding to advertising is the strong connection between pleasure and arousal, and the effect of creative commercials.

²⁸ Kroeber-Riel, W. (1979). Activation research: Psychobiological approaches in consumer research. *Journal of Consumer Research*, 5(4), 240-250.

²⁹ Eysenck, M. W. (1976). Arousal, learning, and memory. *Psychological bulletin*, 83(3), 389.

According to the bio informational theory of emotion (Detenber and Reeves 1996; Lang 1995), pleasure and arousal exhibit high correlations, in which the reactions that take place between the two metrics are described as the reflection of motivational activation, Singh, S. N., & Churchill Jr, G. A. (1987).³⁰

Arousal reactions are coordinated by two motivational systems that are called Appetitive and Defensive systems. They regulate how respondents react to different environments. Furthermore, arousal reflects motivational activation, reactions indicate whether the appetitive or the defensive motivation is activated and the intensity of motivational activation and behavior (Bradley et al. 2001a; Lang, Bradley, and Cuthbert 1998).³¹ It is for these reasons that the questions of the survey (that we will see ahead) are based on excitement, happiness, and stimulation.

Any psychological event establishes a strong trace in the brain, which lasts for a period, named of “consolidation”. The memory of stimuli is also a factor that generates high arousal effects, specifically when the respondent has a better retrieval at long retention intervals (more than 20 min following the presentation of a stimulus), but poor retrieval at short retention intervals (up to about 15-20 minutes following the presentation of the stimulus). During the consolidation period, long-term memory is established. According to action decrement theory then, high levels of arousal lead to longer-lasting memory traces, and hence greater long-term memory, but also to greater initial retrieval inhibition.³²

When a potential consumer is exposed to an advertisement, another factor that can influence the level of arousal is the preexisting mood state at the time of the exposure and in the affective tone of the ad itself (e.g., humorous or fear-inducing). The interaction between the consumer’s mood state and the affective content of the advertisement can have multiple different effects on the opinions. Beyond arousal, the other dimension to analyze the impact of this interaction is “valence”.

When the affective tone of the ad is clear and mood valence does not have a great influence, the arousal component has an effect on ad evaluation. Ads that have a positive-affective tone are likely to be evaluated more favorably under high arousal than under low arousal, whereas ads that have a negative affective tone are likely to be evaluated less favorably under high arousal than under low arousal.³³ Research by Reisenzein (1983) has suggested that affective and evaluative response may be accentuated by arousal experienced at a given point in time. Responses to a given commercial may be stronger if the consumer in exam has been recently aroused.

In my research I also introduced a metric to test the perceived irritation and boredom towards the commercial. In these terms, the famous scholar named Russell locates annoying in the unpleasant dimension, together with low arousal and anger, but the latter usually raise high levels of arousal. This suggests that the two affects

³⁰ Arousal and advertising effectiveness. *Journal of Advertising*, 16(1), 4-40.

³¹ Getting a line on print ads: Pleasure and arousal reactions reveal an implicit advertising mechanism. *Journal of Advertising*, 37(4), 63-74

³² Singh, S. N., & Churchill Jr, G. A. (1987). Arousal and advertising effectiveness. *Journal of Advertising*, 16(1), 4-40.

³³ Gorn, G., Pham, M. T., & Sin, L. Y. (2001). When arousal influences ad evaluation and valence does not (and vice versa). *Journal of consumer Psychology*, 11(1), 43-55.

could be treated separately if necessary. In the advertising literature, anger appears as part of Wells et al.'s irritation ("irritating"), Schlinger's alienation ("irritating"), and Aaker/Bruzzone's dislike ("irritating") in the low-intensity level of irritation.³⁴

For what regards television commercials, it has been deeply researched by Heeter and Greenberg (1985), Yorke (1985) and Lin (1994) that potential customers very commonly avoid them by changing the channel. It is also important to mention the fact that in our days, new technologies such as social media, video-on-demand and direct broadcast, greatly increased marketing and advertising options. This could be one of the reasons why TV advertising is avoided, but it is still a very powerful tool for promotion. However, due to the high incidence of commercial avoidance the reality of facts is that viewers attitude towards³⁵ television ads is negative. Therefore, marketers are highly interested in discovering the potential emotional effects that customers may experience, together with their attitude towards the ad and the brands. Reinforcing this theory is the fact that studies of brain activity during image processing have reported high positive voltage variations in brain potentials related to respondents viewing emotional contents.³⁶ This positive wave forms, clearly discriminating affective from neutral pictures, begins within a few hundred milliseconds after stimulus onset and may be sustained for several seconds.³⁷

When viewing emotional pictures late positive potentials are not only larger, but also their magnitude varies with the intensity of emotional arousal. Pleasant pictures rated high in arousal are associated with more event-related potential positivity than pictures rated lower in arousal. Emotionally arousing stimuli trigger the brains motivational circuits activating sustained attention.³⁸ It is pivotal for advertisers and video makers to know the elements of the commercials that need to be manipulated to positively affect the viewer attitude and increase their motivation and willingness to pay. For reasons of practical purposes, arousal is one of the best metrics to examine the effects of message variables under direct control, since the consumer variables are more difficultly controlled by advertisers. More specifically, content arousal is a valuable metric found to affect viewers allocation of processing resources. It refers to how exciting or calm a message is perceived by a viewer (Lang et al. 1996) and it is likely to be related to emotional appeals in advertising. Cacioppo and Petty (1989) spent years studying emotional appeals in persuasive advertising messages and affirmed that it can lead to a change in attitude of viewers. Their findings refer to the area of message repetition in advertising, outlining the fact that the persuasiveness of an ad at first increases when repetition increases, but then it radically wears out. This wear out, is determined by the negative reaction of respondents after the

³⁴ Batra, R., & Ray, M. L. (1986). Affective responses mediating acceptance of advertising. *Journal of consumer research*, 13(2), 234-249.

³⁵ Yoon, K., Bolls, P., & Lang, A. (1998). The effects of arousal on liking and believability of commercials. *Journal of Marketing Communications*, 4(2), 101-114.

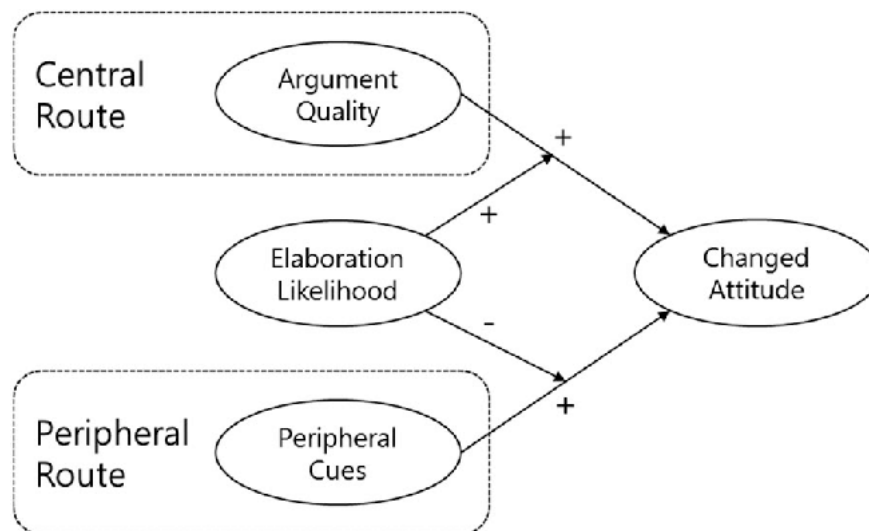
³⁶ Diedrich, O., Naumann, E., Maier, S., Becker, G., & Bartussek, D. (1997). A frontal positive slow wave in the ERP associated with emotional slides. *Journal of Psychophysiology H*, 71, 84.

³⁷ Palomba, D., Angrilli, A., & Mini, A. (1997). Visual evoked potentials, heart rate responses and memory to emotional pictorial stimuli. *International journal of psychophysiology*, 27(1), 55-67.

³⁸ Schupp, H., Cuthbert, B., Bradley, M., Hillman, C., Hamm, A., & Lang, P. (2004). Brain processes in emotional perception: Motivated attention. *Cognition and emotion*, 18(5), 593-611.

frequent presentation of a stimulus. Together with Gordon and Goldberg (1980), they support the fact that moderate repetition can be a pro or a con, depending on the attitude that recipients have towards the message presented and their own knowledge on the issue. It is important to pre-test commercials because these negative attitudes towards the stimulus after a moderate level of exposure to ads are detectable, and given the cost of media bad advertising should be eliminated prior to public exposure.³⁹

“Elaboration Likelihood Model (Petty & Cacioppo, 1986)”



“www.researchgate.net”

Thorson and Friestad (1989) tested this suggestion by making respondents evaluate television commercials, categorized on their level of emotional content.⁴⁰ Results showed that highly emotional ads were liked best and non-emotional ads were liked least. Research has also specifically tested the effects of emotional appeals, showing that emotional ads lead to more positive attitudes.⁴¹

Both the commercials that were chosen for this research have emotional appeals in their storytelling. In particular, the one portraying Liv (the virtual ambassador), is modelled on the emotions of the ambassador, showing the eyes and pupils of Liv that become always more real and telling with words how the driving experience is exciting and unique.

To understand how intricate the world of marketing and emotions is, a peculiar research has been performed on the programs that precede the advertising. Also the fact that there are some commercials that are embedded in TV programs can affect how viewers respond to those commercials. High arousal programs produce an assimilation effect for which evaluations of commercials are enhanced subsequent to the presentation of

³⁹ Cacioppo, J. T., & Petty, R. E. (1989). Effects of message repetition on argument processing, recall, and persuasion. *Basic and Applied Social Psychology*, 10(1), 3-12.

⁴⁰ Thorson, E., & Friestad, M. (1989). The effects of emotion on episodic memory for television commercials.

⁴¹ Yoon, K., Bolls, P., & Lang, A. (1998). The effects of arousal on liking and believability of commercials. *Journal of Marketing Communications*, 4(2), 101-114.

pleasant programs and reduced after unpleasant ones. Contrarily, programs with low levels of arousal produce a contrast effect whereby commercial evaluations are enhanced after unpleasant programs and depressed after pleasant ones.⁴²

Interactivity is another feature that is rapidly growing in today's media environment. For Reeves and Nass 1996 interactivity is considered a primary reason for users social responses to computers. It provides a human-like interaction between a person and a technological device. Indeed, the interactivity encourages users to treat the computer as a source of communication, not only as a medium, unlike traditional non-interactive communication technologies like radio or television, which are very commonly used only as a channel (Sundar and Nass 2000). In the mass communication context, interactivity appears to have a great effect on the users perception of the visible sources. So what better way to create interaction if not through avatars? Can this interaction be implemented in the more traditional channels of communication?

Animation is nowadays one of the most outstanding attention-getting and arousal-provoking methods used in Web advertising, but the scenario is changing and that is not the only channel where it is being used. Experimental research is exponentially growing on the psychology behind animated ads over static ones. Indeed, animated ads have been found to elicit stronger orienting responses by Lang et al. in 2002, faster click-throughs (Li and Bukovac 1999), higher arousal (Heo and Sundar 2000a), better memory for ad content (Heo and Sundar 2000b; Lang et al. 2002; Li and Bukovac 1999), and more positive attitudes toward both the ads (Kalyanaraman and Oliver 2001). As a feature of the new medium, animation has proven to be a powerful tool for generating captivating advertising effects. It is for this reason, that most Web ads are animated rather than static and the trend is growing and expanding.⁴³

Having analyzed attention and its application in understanding advertising effectiveness we arrive to the second hypothesis.

H2: Arousal reports will be higher for respondents who watch the Virtual Ambassador advertisement, rather than the Real Humans one.

An important assumption to make is that Renault's commercial, built with this innovative technique and style, could be more appealing to the younger generations (Generation Y/Millennials, Generation Z), rather than older generations (Generation X and Baby Boomers).

⁴² Broach Jr, V. C., Page Jr, T. J., & Wilson, R. D. (1995). Television programming and its influence on viewers' perceptions of commercials: The role of program arousal and pleasantness. *Journal of Advertising*, 24(4), 45-54.

⁴³ Sundar, S. S., & Kalyanaraman, S. (2004). Arousal, memory, and impression-formation effects of animation speed in web advertising. *Journal of Advertising*, 33(1), 7-17.

6.3 Age (Moderator)

Every different generation has a unique lifestyle, expectations, and values that influence their purchasing behaviors. Many companies are trying to expand their offers to all the generations, attracting their attention through different techniques. This method is called “Multi-generational marketing”, and it is the practice of satisfying the needs of customers in different generational groups.

The majority of respondents of the survey belong to Generation Y (Millennials) and Baby Boomers. Millennials were raised in an era of fast and huge changes also due to the multitude of family types ethnic and culturally wise, and the technological revolution. They were born into a technologically advanced society that is bringing down global boundaries, enabling faster and easier communication. In terms of marketing, Millennials are attracted by creative media and promotions, companies that want to attract their attention must target this generation by placing an advertisement in appropriate channels such as Internet sites, TV, radio programs and video games through “advergaming”.

Brands must commit to being always more creative with their marketing strategies and media capture this type of audience. A combination of online and offline channels that trigger word-of-mouth, is probably the best strategy for reaching Generation Y. They expect experiences to be interactive, being inherently impatient as they grew up in a technological world of instant gratification. Content is the most important feature for attracting this generation, together with an omnichannel strategy that enables the movement of content from channel to channel with no restrictions.⁴⁴

Consumers belonging to Generation Y are often early adopters of new technologies and are the major users of the internet. According to Yarrow and O'Donnell, Generation Z and Millennials are twice more likely than the elder generations to use mobile devices for different tasks as shopping online, coupons and promotions.⁴⁵

However, Generation Y individuals watch less television and are less influenced by classical media channels. They are much more reluctant to commercials that appear in a more mainstream media, they also respond to advertisement differently, preferring to encounter them in social media or internet sites. This is the reason why many companies are less reliant on traditional media advertising and more on digital, event and product placement based marketing. Younger generations do not trust traditional media as much as older generations do, therefore depending more on word-of-mouth when making purchase decisions. Moreover, marketers that have successfully targeted Generation Y usually adopt messages that involve surprise and humor.⁴⁶

⁴⁴ Williams, K. C., & Page, R. A. (2011). Marketing to the generations. *Journal of Behavioral Studies in Business*, 3(1), 37-53

⁴⁵ Yarrow, K., & O'Donnell, J. (2009). *Gen buy: How tweens, teens and twenty-somethings are revolutionizing retail*. John Wiley and Sons.

⁴⁶ Peterson, K. (2004). Savvy Gen Y isn't buying traditional sales pitches. *The Seattle Times*, 17.

Generation Y is a unique consumer group whose behavior is often discussed but not fully understood,⁴⁷ and is for this reason that this research will also be useful to understand the self-reported emotions of the respondents towards the innovative Renault commercial.

The Baby Boomers, in terms of lifestyle and attitude, are usually very dedicated to their jobs and career.⁴⁸ Many of them are committed to the re-engineering of their lives planning to continue working after their retirement. Family responsibilities are very important to them and this generation is tech-savvy and innovation inclined.⁴⁹ For what regards communication, aging individuals belonging to this generation like facts, which help them to take decisions and information presented in terms of options. Public recognition and personal gratification are important to them. One of the media channels that is still major to gain their attention is television, due to the fact that they prefer direct language and communication. Brands must build their commercials using positive and emotionally meaningful concepts, words and images using storytelling. Their environmental consciousness is increasing like their will to be sustainable, but they desire to save by green products followed by environmental benefits as a payoff. While the younger Boomers are less idealistic than they once were (Rock, 1995), and are easily turned-off by advertising, stores, and shopping malls that attract young people (Russell, 1997).⁵⁰

The concepts analyzed above will be useful to understand the procedure used to bring the research forward that will be outlined in the next section.

7. Interviews

To attain preliminary information for what regards the previously examined hypotheses, I performed ten interviews discussing with the respondents, their felt emotions and attention. I showed them two commercials powered by Renault, both created to promote the SUV called Renault Kadjar. One resembles Liv, the Virtual Ambassador, the commercial lasts 00:45 min and the storytelling revolves around the emotion that the Ambassador is living, even though she is not real. While the experience becomes more and more vivid and exciting, Liv becomes more human, until the end of the commercial when she becomes almost totally human and stops near a cliff watching the landscape. The other advertisement is 00:30 min long and, contrarily to the first one, it figures two real human actors driving the Kadjar, interpreting a couple in the early days of a divorce, but anyways they drive to their sea house having fun together. Also this commercial is strong for what

⁴⁷ Racolta-Paina, N. D., & Luca, T. A. (2010). SEVERAL CONSIDERATIONS REGARDING THE ONLINE CONSUMER IN THE 21st CENTURY-A THEORETICAL APPROACH. *Management & Marketing*, 5(2).

⁴⁸ Koco, L. (2006), "Use Generational Marketing to Reach Boomers, Younger Clients," *National Underwriter Life & Health*, 110(20), 26-27.

⁴⁹ Chang, I. (2007a), "Fact File," *PRweek*, 10(49), 9-10.

⁵⁰ Roberts, J. A., & Manolis, C. (2000). Baby boomers and busters: an exploratory investigation of attitudes toward marketing, advertising and consumerism. *Journal of Consumer Marketing*, 17(6), 481-497.

regards emotions and also humor, because at the end they let the viewer perceive that the two characters will maintain a good relationship keeping their sea house.

The sample constitutes of ten respondents, five of them belong to the Baby Boomers Generation (born between 1946 and 1964), and the other half belongs to the Millennials Generation (born between 1981 and 1996). I followed an informal communication method to ascertain the sincerity and the tranquility of the viewers. The older respondents were reached through word of mouth and the younger ones in universities. At the beginning of the interview, I asked them if they had a basic knowledge of the English language because both commercials were presented in English, the respondents that did not fulfill this requirement were not selected.

In the first place, I outlined to the respondents what they were about to see, asking them to be very concentrated for the lasting of both commercials. After they viewed the two publicities I asked them to describe what they saw outlining the story of the commercials, subsequently, they were posed questions for what regards the level of Arousal. They were asked which of the two advertising they liked the most and why, next, which of the two stimulated and excited them the most, if they found one of the two or both advertising irritating and if they felt wide awake or calm while watching.

Subsequently, they were asked questions on their Attention level. I asked them in which of the two commercials they paid more attention to the driver, testing their answers observing if they remembered features of both drivers asking them for example the sex of the driver, if he/she wore sunglasses and the color of the eyes. To conclude they were asked which of the two ads could push them more to evaluate the purchase of the car. All of the respondents belonging to the Millennials sample, registered a self-reported level of attention higher for the Virtual Ambassador advertising as hypothesized in my H1. They reported that the eyes and the experience of the protagonist driving the Renault Kadjar were more captivating, always remembering the color of the ambassador's eyes. Also in the Baby Boomers sample, the Attention level was reported as higher but not for all of them, but, also the ones that did not report these types of data remembered that the eyes of the ambassador were brown and not that the male actor wore sunglasses.

For what regards the arousal levels, most of the respondents of both generations said that they liked and felt more stimulated when looking at the advertising resembling real actors. Their explanations were similar, they felt that the storyline of this commercial was more emotional and close to a problem of our society. Contrarily to my second hypothesis the results of the self-reported arousal levels, tell us that it was higher for the real humans commercial, even though one respondent of each sample reported to be more stimulated by the virtual ambassador one. The last question, regarding the purchase intention, gives us some insights that further research must be performed because most of the respondents reported that the virtual ambassador advertising was more effective in making them evaluate to buy the SUV .

8. Survey

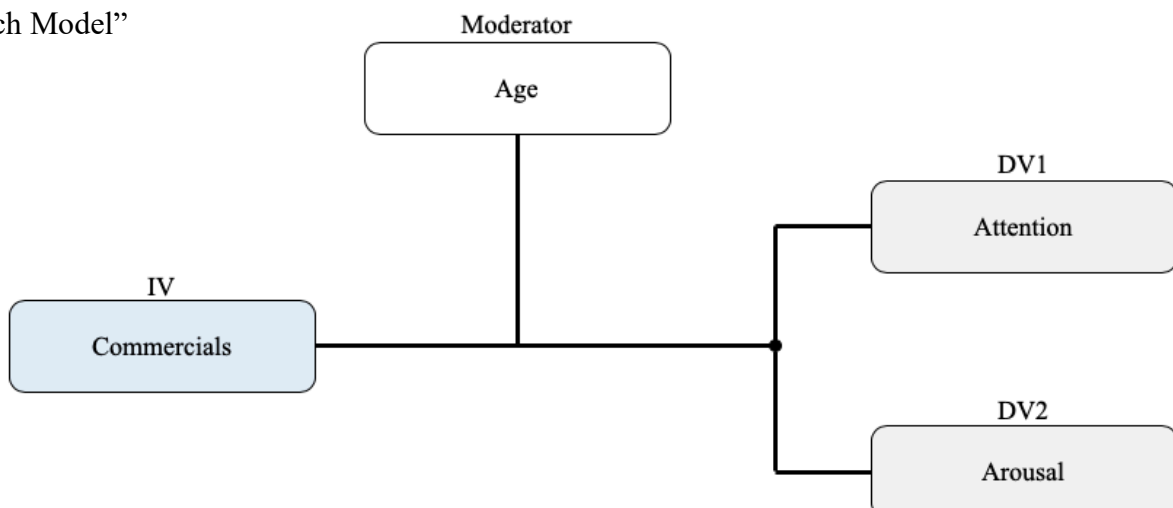
8.1 Procedure

The Independent Variables of this research will be the two Renault commercials mentioned above. As Dependent Variables for this research, I exploited Attention and Arousal, to analyze how the respondents sensed their emotions viewing the commercials. I asked several seven-point likert-scales type of questions on the level of self-reported Arousal and Attention. Examples of questions asked to test the Attention are, “How much attention did you put on the driver?”, “How much did you focus on the driver?”, “How much did you feel involved?” and “How much did you notice the driver?”. The likert-scale goes from 1= “Not at all” to 7= “Very much”. For what regards Arousal examples of the likert-scale questions asked are, “1= Relaxed/ 7= Stimulated”, “1= Sleepy/ 7= Awake”, “1=Calm/ 7= Excited” and “1= I did not like it/ 7= I liked it”. Age is the moderator for this research, hypothesizing that younger respondents would be more positively moved by the Virtual Ambassador advertisement rather than older ones.

To collect the data suitable for the analysis, I conducted an online survey grouping a population of 282 respondents. 82 of them did not complete the questioner, the two commercials were reported in English, so at the end of the survey I asked if the respondents had a basic understanding of the English language, if not the responses were excluded, 2 of them recognized that they did not possess this requirement. At the end of this control, the total of the complete responses amounts to 198. Their age varied from 17 to 65 years old, the mean age is 28,11 years old. The nationality of the respondents was majorly Italian, 190 and 8 Europeans. The survey was composed of 12 questions 2 videos. The two videos were randomized equally through the respondents, resulting in fifty percent of them watching the Virtual Ambassador commercial and the other half were faced with the Real Actors one.

The distribution method of the survey varied from social media (Facebook and Instagram), E-mail and word-of-mouth, all the responses were gathered in a two weeks’ time period.

“Research Model”



8.2 Results

The first step to analyze the results of the survey was to check the reliability of the scales used.

The first variable to be tested was Attention:

Reliability Statistics

Cronbach's Alpha	N° of Items
0.799	5

FACTOR Attentionad=(Attentionad1+ Attentionad2+ Attentionad3+ Attentionad4+ Attentionad5/ 5)

Cronbach's Alpha values are greater than 0.6 (CA=0.799), which indicates that the scales show good reliability.

For what regards the second independent variable, Arousal:

Reliability Statistics

Cronbach's Alpha	N° of Items
0.743	4

FACTOR
/VARIABLES Arousal1 Arousal2 Arousal3 Arousal4

Cronbach's Alpha values are greater than 0.6 (CA= 0.743), which indicates that the scales show good reliability.

Following the reliability analysis, to test what effects my conditions had on both Attention and Arousal, a two-way Anova was performed for both the independent variables, showing contrasting results.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.068	1	15.068	35.127	.000
Within Groups	84.076	196	.429		
Total	99.144	197			

For what regards Attention, as we can see from the tables above, the Anova revealed that the predicted values show that the respondents recognized to pay more attention to the virtual ambassador commercial rather than the one with real actors. As shown by the results, Model F (1,196) = 35.127, $p < 0.05$, the fact that “Sig.” has a value that is lower than “0.05”, shows that the study has statistical significance.

Descriptives

Attentionad

	N°	Mean	Std. Deviation	Std. Error	Lower Bound	95% Confidence Interval		Maximim
						Upper Bound	Minumum	
Real	98	2.7122	.58155	.05875	2.5957	2.8288	1.20	4.20
Virtual	100	3.2640	.71964	.07196	3.1212	3.4068	1.00	5.00
Total	198	2.9909	.70941	.05042	2.8915	3.0903	1.00	5.00

We can also see, that in the “Descriptives” table, the mean of the virtual ambassador commercial (Mean = 3.2640), is higher than the real actors commercial (Mean = 2.7122), which indicates that the majority of the respondents answered with a higher value on the likert-scale.

The same procedure was brought forward to test Arousal.

OUTCOME VARIABLE:

Arousal

Model Summary

R	R-sq	MSE	F	df1	df2	p
.1212	.0147	.6824	.9248	3.0000	186.0000	.4299

Model

	coeff	se	t	p	LLCI	UCLI
Constant	3.2846	.5695	5.7679	.0000	2.1612	4.4080
Conditio	.1208	.3600	.3357	.7375	-.5894	.8311
AgeBinom	-.1663	.4108	-.4048	.6861	-.9766	.6441
Int_1	.0412	.2591	.1589	.8739	-.4699	.5522

Product terms key:

Int_1 : Conditio x AgeBinom

As shown by the tables above, Model $F(3,186) = 0.9248$, $p > 0.05$, due to the fact that the “P-value” is higher than “0.05” the model is not statistically significant. Also the condition (Conditio) and the moderator (AgeBinom) have “P-Values” higher than “0.05”, respectively ($p = 0.7375$ and $p = -0.4048$), their relation is not statistically significant. Since the “P-Value” is not inferior to “0.05”, we do not reject the null hypothesis. To test the two independent variables in correlation, the analysis followed with the computation of a two-way Manova. But, before this, the correlation between the two variables had to be tested.

Correlation

		Arousal_Gen	Attention_Gen
Arousal_Gen	Pearson Correlation	1	.425”
	Sign. (two tails)		.000
	N	198	198
Attention_Gen	Pearson Correlation	.425”	1
	Sign. (two tails)	.000	
	N	198	198

As shown by the table above the relation between Arousal and Attention is positive ($r = 1$), even though the strength of this correlation is weak, in spite of this fact we can compute the two-way Manova

Descriptives

		N°	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Arousal	Real	95	3.2421	.83691	.08576	3.0718	3.4124	1.00	5.00
	Virtual	95	3.4158	.81018	.08312	3.2507	3.5808	1.00	5.00
	Total	190	3.3289	.82557	.05989	3.2108	3.4471	1.00	5.00
Attentionad	Real	95	2.7221	.57855	.05936	2.6042	2.8400	1.20	4.20
	Virtual	95	3.2441	.70631	.07247	3.1003	3.3881	1.00	4.80
	Total	190	2.9832	.69505	.05042	2.8837	3.0826	1.00	4.80

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Arousal	Between Groups	1.433	1	1.433	2.115	.148
	Within Groups	127.383	188	.678		
	Total	128.816	189			
Attentionad	Between Groups	12.948	1	12.948	31.066	.000
	Within Groups	78.358	188	.417		
	Total	91.306	189			

For what regards Arousal, the results were the same, $F(1,188) = 2.115$, $p > 0.05$, showing no statistical significance, but we can observe that the Mean for the virtual ambassador commercial is slightly higher (Virtual = 3.4158, Real = 3.2421), this suggests that the respondents gave slightly higher results on the likert-scale questions for Arousal.

Also with the two-way Manova, our second independent variable (Attention) shows statistical significance, $F(1,188) = 31.066$, $p < 0.05$, also the Mean for the virtual ambassador commercial is higher (Virtual = 3.2441, Real = 2.7221), suggesting the fact that the respondents felt more captivated by the Renault advertisement resembling Liv.

In spite of the fact that self-reports are not the most effective way to test Attention and Arousal elicited by advertising, as mentioned above, results show that there was a significant difference for what regards the attention generated by the two commercials. This represents a good base to bring forward a more in-depth research with Neuromarketing methods.

9. Neuromarketing Methods

In our days, consumers buy products not only for their beauty or functionality but also for the way they define them, matching their nature and personality. Little by little, the trade-mark or the brand will always be taken more into account as opposed to the physical product, as our brain visions the product in a better way if it contains elements that define the individual. Neuromarketing derives from the application of Neuroscience methods to marketing research. It is useful to study consumers' emotional responses to the stimuli's sent by commercials, products and experiences. There are various neurophysiological methods that register the effect of advertisement stimuli on the human brain. Some of the most used methods are: eye tracking, galvanic skin response, functional magnetic resonance imaging (fMRI), electroencephalography (EEG), magnetoencephalography (MEG), heart and respiration rate.⁵¹

The classical marketing communication sees the marketer as the emitter and the consumer as the receptor of the message. When implementing neuromarketing techniques instead, the roles should be inverted. The firms should become the receptors of the information's on the products to launch and consumers should become the emitters of these information's. The building of a strong relationship between the company and the consumer is becoming always more essential for many types of businesses. Consumers are always more hard pressed by advertising of all types, for this reason, the brands question always more the efficiency and effectiveness of communication campaigns. The deep understanding of motivation in first place, ability and opportunities of consumers represent more than plausibly the future of marketing. It has been studied that 95% of what consumers think is unconsciously processed, the research is developing to solve the problem of the discrepancy between what an individual says and what he thinks. This is what neuromarketing is enabling, understanding the motivation that pushes the individual to action, determining their preferences.

If firms start to understand the way consumers think, their offer could be more targeted for what the individual really needs, reducing "spam advertising" to the minimum. Neuroscience is the key for rethinking the way of communication, studying the brain and the synergy between science and business, offering what is really necessary. Another possibility that neuroscience enables, is the understanding of consumer behavior, studying the process of choice of different brands identifying the factors that determine the choice.

As underlined by Christophe Morin, author of the book "Neuromarketing: Understanding the Buy Buttons in Your Customer's Brain", people have an innate tendency to pay attention to the beginning and the end of an ad, and that neuromarketing is the science that is useful to firms to enhance the ways of designing, building and communication a commercial campaign, making them interesting for the targeted audience and more attention-grabbing.⁵²

⁵¹ (Popa, L., Selejan, O., Scott, A., Mureșanu, D. F., Balea, M., & Rafila, A. (2015). Reading beyond the glance: eye tracking in neurosciences. *Neurological Sciences*, 36(5), 683-688.

⁵² (Ciprian-Marcel, P., Lăcrămioara, R., Ioana, M. A., & Maria, Z. M. (2004). Neuromarketing-getting inside the customer's mind. *J Econ Lit*, 1(804), 7.)

9.1 Eye Tracking

An extremely suitable neuromarketing tool for the purposes of this research is Eye Tracking. It is commonly used for the analysis of visual attention, seeking to associate the latter with emotional and cognitive responses of consumers. The types of eye movement which can be distinguished by eye tracking are saccades, fixations, smooth pursuit eye movements (SPEM) and vestibulo-ocular reflex.⁵³ The techniques for measuring the movement of the eyes are, contact lens-based, electro oculogram-based and video-based. The most common is the video-based tracker, that captures the gaze of the respondent while he watches the stimuli presented.⁵⁴ In addition to marketing purposes, eye tracking is used in many different fields, very important also psychology wise, helping to explain attention, visual perception, language and social interaction. For what regards media, it may give insights about scene perception (of movies or commercials) and visual search, testing also the usability of apps and websites.⁵⁵

What is useful to understand for this study, is how eye movement works in respect to ads. It involves fixation, where the eye is stable, and saccades, where the eye moves between fixation locations to redirect gaze.

Two important metrics of eye tracking are attention selection and attention engagement. The first means to bring a desired point of advertisement into the focus of attention, reflected in at least one eye movement to fixate it. Attention engagement instead, is the attention sustained on a preselected point, it has duration and intensity components. The extent of the attention is reflected in a longer duration of the gaze, achieved by refixation, as outlined by Russo and Leclerc in 1994.

Conversely, the intensity of attention has been attributed to the change of pupilar diameter, when it becomes larger, it captures more light ensuring a better vision.⁵⁶ Eye tracking measures are gaze and fixation points, which indicate the time that a viewer's spends looking at a specific point, pupil dilation, eye movement and blink rate. They also give insights about the sequence of observed points. The following image shows a gaze plot on a Motorola advertisement.

⁵³ (Vidal M, Turner J, Bulling A, Gellersen H (2012) Wearable eye tracking for mental health monitoring. *Comput Commun* 35(2012):1306–1311).

⁵⁴ (Lupu RG, Ungureanu F (2013). A survey of eye tracking methods and applications. *Bul Inst Polit Ias j*; LIX (LXIII) (3): 71-86).

⁵⁵ (Popa, L., Selejan, O., Scott, A., Mureșanu, D. F., Balea, M., & Rafila, A. (2015). Reading beyond the glance: eye tracking in neurosciences. *Neurological Sciences*, 36(5), 683-688.)

⁵⁶ (Pieters, R., & Wedel, M. (2007). Goal control of attention to advertising: The Yarus implication. *Journal of consumer research*, 34(2), 224-233.)

“Gaze Plot on Motorola Advertisement”



www.feng-gui.com/science

Gaze plots show the location, order and time spent watching specific points on the stimulus, it can be applied to web pages, billboard advertisement, products and commercials. Its function is to attain information on the time sequence of gaze or where and when the viewer looks at a specific location. Fixation duration (the time spent looking at a point), is shown by the diameter of the circles, the longer the look, the larger the circle. The points of focused attention may be detected also through Heat Maps. Contrarily to the gaze plot, there is no information about the order of looking and on the focus on individual fixations. But, heat maps may serve to effectively reveal the focus of visual attention and it can be applied for a high number of participants simultaneously, making it a very practical and time-saving method. Following an image that shows heat maps on a Dolce & Gabbana advertisement.

“Heat maps on D&G Advertisement”



www.businessinsider.com

There are many different technologies for eye tracking, the most common are those that give insights on the observation of controlled stimuli at fixed points in videos, billboards or websites. This technique is gaining more and more relevance in today's business environment, full of visual pollution, responsible for the shifting of consumers attention. As Zhao & Koch explained, a deeper understanding of the reasons that guide people to watch certain points in an advertisement has a great multitude of applications for the business world. Eye tracking can provide information on what is really relevant for the capturing of consumers attention.

The synergy between visual focus and emotional response grant an effective method for understanding reactions in response to a specific stimulus (Hill, 2011). This method is extremely relevant for TV advertising because throughout commercials plenty of information is presented every millisecond, with the risk of preventing the viewers to understand what they really liked or what caught their attention.⁵⁷ Neuromarketing methods aim at analyzing the brain of respondents while experiencing a marketing stimulus to find out how the neural system is connected to different types of buying behavior. By exploiting the knowledge stemming from brain anatomy studies and physiological functions of brain areas, awareness about the

⁵⁷ (dos Santos, R. D. O. J., de Oliveira, J. H. C., Rocha, J. B., & Giraldo, J. D. M. E. (2015). Eye tracking in neuromarketing: a research agenda for marketing studies. *International Journal of Psychological Studies*, 7(1), 32.)

connection between consumer behavior and neural activity is always higher. If neuromarketing research is correctly applied for the understanding of advertising messages, the processing of information in our brain could be always more optimized.

Empirically, marketing’s main goal is to pair people with suitable products and services. Neuromarketing methods are great tools to achieve this objective, because of its numerous applications for brands, advertising, stores, packaging, being able to study emotions and eventually purchase intention. Research done on neuromarketing is based on neuroscience as we saw previously, neuroimaging techniques are utilized to test hypotheses and improve existing marketing knowledge.

Following we can see a tree.-structured table, built by Zurawicki (2010), Kenning et al. (2005) and Calvert et al. (2004), which outlines all the different types of neuroscience tools for marketing research. They divided them in the ones that record metabolic activity and electric activity of the brain.⁵⁸

“Classification of neuromarketing tools”

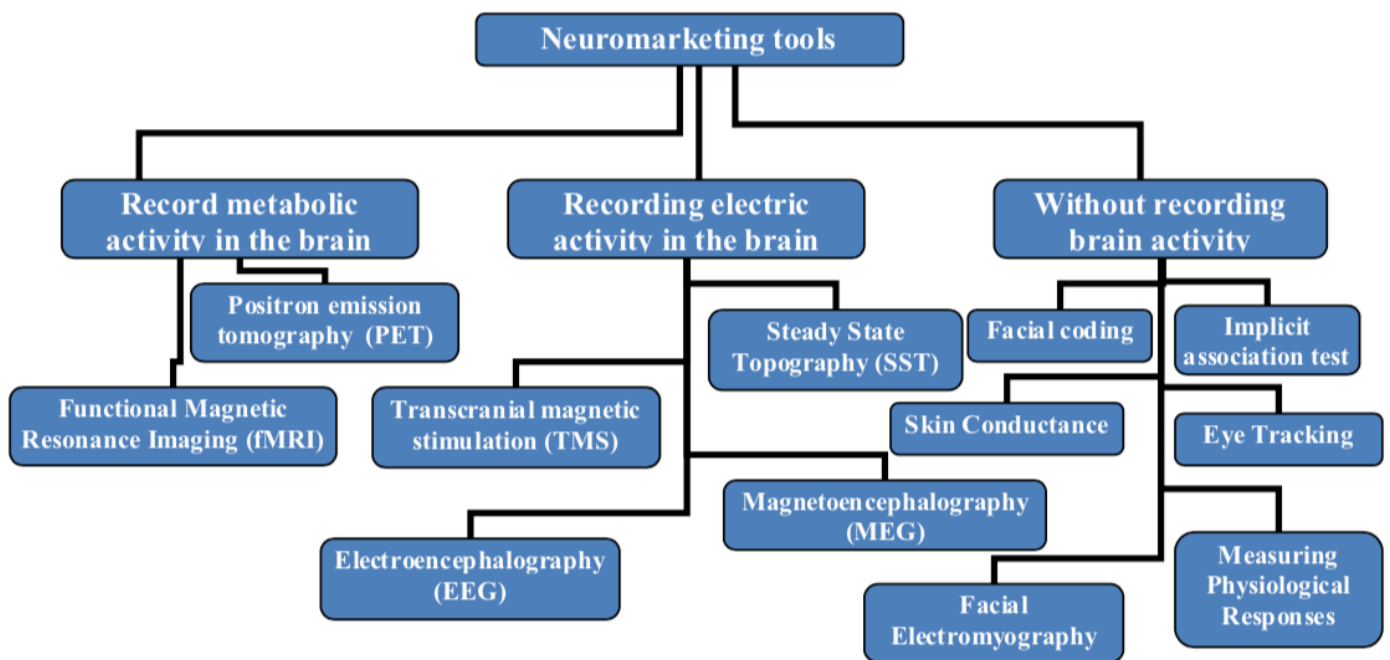


Table by: Zurawicki (2010), Kenning et al. (2005) and Calvert et al. (2004)

⁵⁸ Bercea, M. D. (2012). Anatomy of methodologies for measuring consumer behavior in neuromarketing research. In *Lupcon Center for Business Research (LCBR) European Marketing Conference*.

9.2 Electroencephalography (EEG)

For the purpose of testing Arousal, the second independent variable, there are different neuromarketing tools that are applicable and effective. Electroencephalography (EEG), is the first that would be pivotal to apply for future research, it is one of the most used techniques in neuromarketing research. The first regular studies that have been brought forward using EEG go back to the 1980s, when Lind F. Alwitt published a paper on advertising content using this tool.⁵⁹ It registers brain waves variations produced by the cortex, amplitude of the brainwaves corresponding to different mental states like alpha waves for relaxation, beta waves for wakefulness, theta waves for calmness and delta waves for sleepiness.

“EEG testing for supermarket products”



“www.unravelresearch.com”

Morin (2011) states that measures of alpha-waves in the frontal left lobe point out positive emotions, this is a great predictor for motivation. Moreover, it can also measure excitement, emotional valence, cognition, approach and avoidance, very important metrics in the neuromarketing field. Ohme et al. (2011) EEG has become a very popular method because it presents many advantages, it is relatively inexpensive and it has high temporal resolution. It is a non-intrusive method, it is a portable device, it can record brain activity in many different circumstances and allows comparisons between left and right hemispheres (Plassmann et al. 2011),

⁵⁹ Ohme, R., Reykowska, D., Wiener, D., & Choromanska, A. (2009). Analysis of neurophysiological reactions to advertising stimuli by means of EEG and galvanic skin response measures. *Journal of Neuroscience, Psychology, and Economics*, 2(1), 21.

measuring approach-related tendencies (left-hemisphere dominance, positive emotional responses) or withdrawal-related tendencies (right-hemisphere dominance, negative emotional response).⁶⁰

Other techniques (e.g., functional magnetic resonance imaging) have time resolution of a few seconds, whereas the EEG has a time down to milliseconds (Huettel, Song, & McCarthy, 2004). This enables scholars to precisely detect changes in brain activity that are connected with rapidly changing stimuli (as in TV commercials).⁶¹

It must be noted, however, that EEG has limited anatomical specificity, it can only gather information from peripheral regions of the cortex, measuring more superficial electric signals, so it has a high temporal but a low spatial resolution.⁶² It can be extremely suitable for this research because it is effective in testing hypotheses on the emotions elicited by TV commercials. Utilizing EEG in combination with survey, is a widely used marketing research method to evaluate TV ads, because they complement each other there are insights from self-reported measures that cannot be seen in brainwaves and vice versa. (O'Connell et al. 2011 and many others used this method to test, more than ads, also packaging and products).⁶³ Also, Vecchiato et al. (2011) used in his study EEG equipment in order to calculate the product moment correlation coefficient in obtaining the subject's pleasantness while watching a TV advertisement.

9.3 Galvanic Skin Response (GSR)

The second very important method for the purpose of analyzing Arousal is Galvanic Skin Response (GSR). Out of all psychophysiological variables, GSR is the most commonly used in our days. It provides robust and useful data for a multitude of experiments in many different fields.

The electrical conductance of the volar skin, displays slow changes due to diurnal variations, the excitatory value of the immediate stimulus situation and other factors. Superimposed over these changes there are changes which may be elicited by external stimuli. The average pre-stimulus level is called the "basal" conductance while phasic increase in conductance is most often referred to as a "galvanic skin response". The term basal refers to "standard", "at the base", obtained in a stress-free, resting situation.⁶⁴

⁶⁰ Bercea, M. D. (2012). Anatomy of methodologies for measuring consumer behavior in neuromarketing research. In *Lupcon Center for Business Research (LCBR) European Marketing Conference*.

⁶¹ Ohme, R., Reykowska, D., Wiener, D., & Choromanska, A. (2009). Analysis of neurophysiological reactions to advertising stimuli by means of EEG and galvanic skin response measures. *Journal of Neuroscience, Psychology, and Economics*, 2(1), 21.

⁶² Fortunato, V. C. R., Giraldo, J. D. M. E., & de Oliveira, J. H. C. (2014). A review of studies on neuromarketing: Practical results, techniques, contributions and limitations. *Journal of Management Research*, 6(2), 201.

⁶³ Bercea, M. D. (2012). Anatomy of methodologies for measuring consumer behavior in neuromarketing research. In *Lupcon Center for Business Research (LCBR) European Marketing Conference*.

⁶⁴ Lykken, D. T., & Venables, P. H. (1971). Direct measurement of skin conductance: A proposal for standardization. *Psychophysiology*, 8(5), 656-672.



“www.ashokcharan.com”

Skin conductance is based on the analysis of subtle changes in galvanic skin responses (GSR) when the autonomic nervous system is activated (Ohme et al. 2009), measuring arousal.⁶⁵

It presents many different advantages, the technology is able to separate the noise making possible to measure the degree of true arousal, predicting the possible market performance better than self-reports. It is easy to transport and relatively inexpensive, it can be used in combination with heart and respiration rate detectors. As a downturn it cannot determine the valence of an emotional reaction, for example, it can't distinguish excitement and stress because they look very similar.

10. Managerial Implications

Generating copies or creating influencers, models and ambassadors with CGI technology is a fast pace growing trend, we can infer this from all the successful examples mentioned at the beginning of the research. This new “modus operandi” presents many advantages, and it is for this reason that further research is essential. But, before outlining the reasons why this is so important, one of the first thoughts that may come to mind is “what about ethics?”.

⁶⁵ LaBarbera, P.A. & Tucciarone J.D. (1995). GSR reconsidered: A behavior-based approach to evaluating and improving the sales potency of advertising. *Journal of Advertising Research*, 35, 33-53.

Some may argue that developing CGI characters could possibly overtake the job of being a model. After some research, it was evident that this argument is still not discussed, also because this practice is still not so preponderant. However with examples like “Liv” and “Diesel x Days Gone” we can figure out that the characters of the ads were not generated from scratch but by modeling them on actual human beings. This method is used also in movies, and it does not preclude actors from working.

“Motion capture 3D technology from the movie Avatar”



“www.simomr.wordpress.com”

Further research should be brought on using neuromarketing methods. From an evolutionary outlook, emotions evolved to adapt, regulating the behavior of humans, helping individuals to estimate what are the important aspects of the environment surrounding them. Usually when something changes humans take actions like avoidance and approach depending on the concern. Previous studies have proved that many different factors may affect the magnitude of emotional response. Some of these factors may be the stimulus content ⁶⁶, previous experience with the evoked stimulus, and the differences between the respondents.⁶⁷ An increasingly large body of research is providing evidence that the way media is presented and its characteristics make emotional responses vary dramatically (Simons, Detenber, Roedema, & Reiss, 1999).⁶⁸ This is one of

⁶⁶ Bradley, M. M., Codispoti, M., Cuthbert, B. N., & Lang, P. J. (2001). Emotion and motivation I: defensive and appetitive reactions in picture processing. *Emotion*, 1(3), 276.

⁶⁷ Cook, E. I. I. I., & Turpin, G. (1997). Differentiating orienting, startle, and defense responses: The role of affect and its implications for psychopathology. *Attention and orienting: Sensory and motivational processes*, 23, 137-164

⁶⁸ Codispoti, M., & De Cesarei, A. (2007). Arousal and attention: Picture size and emotional reactions. *Psychophysiology*, 44(5), 680-686.

the reasons why virtual ambassadors may be positively perceived by the public. An assumption that could be made is that the new generations like Millennials (Generation Y), and probably even more Millennials (Generation Z) could be more captivated by this type of advertising, taking in consideration the fact that they are inherently more accustomed to technology and possess a more open and future-oriented mentality.

Moreover, another important factor to consider is that a virtual ambassador could provide a “face” to brands that belong to industries that historically did not contemplate testimonials in their marketing strategies, like for companies belonging to the technological market, as an example we can mention, “Microsoft”, “Intel” or “HP”. This type of brand could create their ambassador that may represent them on social media, billboard and video advertising. Imagine “Amazon” giving life to its “Alexa” providing her a face and a body, enhancing her communication potential. This practice could improve dramatically this firm’s marketing strategies bettering their image conceiving the virtual ambassadors to mirror the company’s personality and tone of voice. Aaker (1997) studies suggest that the best way to approach the consumer–brand relationship is through the concept of personality because consumers have a common tendency to humanize brands. This enhances and facilitates the feeling of emotions towards the brand and the creation of a relationship with it, helping to explicate the brand identification process. In human relationships, people tend to develop their personality also incorporating desirable traits from their partners. When he or she possesses better-valued traits, results more interesting and attractive. People also tend to incorporate brands as part of themselves, so a brand ambassador could manifest the human component and the brand value system,⁶⁹ as well as offering their own desirable traits. The testimonial endorsement can result in more than a simple advertising initiative because it provides the basis for a long-term change in consumer identification with the brand.

Contrarily to what could be with a celebrity or a model, the virtual ambassador presents the great advantage of “control”. There are various studies that describe how consumers tend to be sensitive to how brands react when their ambassadors behave in a bad manner. Any event that generates negative effects is likely to be judged by consumers, who usually distinguish the celebrity’s or the model’s degree of responsibility and the reaction to media coverage of the incident,⁷⁰ as well as the actions that the companies implement as a response. The most preponderant examples of these events are when Gatorade, AT&T and Accenture ended their contracts with Tiger Woods after the infidelity scandal in 2009, Knittel and Stango (2010) estimated that it produced around \$12 billions of shareholder losses. However, his actions appeared clearly less serious than the allegations surrounding Olympian Oscar Pistorius, whose murder charges generated quick disavowals from co-brands such as Nike and Oakley. Implementing a strategy that includes the creation of a virtual ambassador, companies should not be worried of damages to their image that could be brought by the bad

⁶⁹ Harris, F., & De Chernatony, L. (2001). Corporate branding and corporate brand performance. *European Journal of marketing*, 35(3/4), 441-456.

⁷⁰ Louie, T. A., & Obermiller, C. (2002). Consumer response to a firm's endorser (dis) association decisions. *Journal of advertising*, 31(4), 41-52.

conduct of their testimonials, because they could create and control the ambassador in the way they consider most suitable for their brand.⁷¹

11. Conclusions

The current research provides evidence of a theoretically consistent relationship that a virtual ambassador may elicit a high level of self-reported attention, especially in respondents that belong to Generation Y (Millennials). For what regards arousal instead, the survey did not show statistical significance but the interviews show that there could be some significant correlation between advertisings with virtual ambassadors and higher levels of arousal.

Through the literature review, it becomes clear the fact that customers positive feelings and emotions towards brands, coincide with a higher purchase intention. Thus, companies should search for innovative strategies to enhance emotional bonds with their customers. Among the various approaches that a company may implement, the use of an endorser for their brand provides a mean to humanize the brand and develop an identity and personality. Brand managers should make always more efforts to move consumers from rational preferences to more emotion-based links with their firms, going beyond technical and performance-based considerations to provide meaning deriving from their relationships with consumers.

An advertising strategy that relies on the implementation of an ambassador aims at creating emotional connections with the consumers.⁷² Thus, marketers should ensure that the ambassador's image and personality fit the nature of the brand.⁷³ Selecting the celebrity or model that will be the company's testimonial can constitute a risk of negative impacts on the brand, through the implementation of these new virtual ambassadors the risk would be virtually non-existent (Louie and Obermiller, 2002).

Due to the fact that we live in a world characterized by a fast-paced technological growth, the exploitation of this new trend could be an innovative source of competitive advantages for many companies. This preliminary study provides the basis for further research regarding the arousal, attention and other psychological dimensions that could be triggered by a commercial with a virtual ambassador, in comparison to real actors. To ensure statistically significant data, future studies should be performed with Neuromarketing method, comprising electroencephalography, galvanic skin response and eye tracking, a definitely more reliable way to test these variables.

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⁷² McCracken, G. (1989). Who is the celebrity endorser? Cultural foundations of the endorsement process. *Journal of consumer research*, 16(3), 310-321.

⁷³ Erdogan, B. Z. (1999). Celebrity endorsement: A literature review. *Journal of marketing management*, 15(4), 291-314.

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Summary

1. Introduction

Today's business environment is characterized by a fast pace technological implementation and always new innovations. Marketing is one of the fields where this transformation is more sound, machine learning is adopted for the analysis of big data, physical stores are always more equipped with in-store technologies and scientific methods are employed to test and monitor advertising. Speaking about the latter, the consequence that certain advertising campaigns, brands and products have upon people, from a mental and emotional point of view, is being assessed, utilizing neuroscience metrics. By implementing neuromarketing methods, several commercial effectiveness indicators can be measured. Some of these metrics are: memory retention, emotional engagement, purchase intention, awareness, novelty and attention. Our decisions are mostly based on our emotions.

But, prior to the utilization of neuroscience method to analyze the effectiveness of advertising campaigns on people, because emotions are both conscious and unconscious, a test through classical marketing research methods is opportune. Humans are by nature empathetic, empathy is the ability to understand or feel what another human being is experiencing, physically and mentally. For this reason, the research will be focused on advertising resembling people, but, not only real ones. This because we need to be aware that in these days, virtual representations of humans are always more common.

This study will be centered on the analysis of ten interviews and an online survey where the respondents were asked to answer questions on their Attention and Arousal levels, after watching two different TV commercials powered by Renault. The two advertisings resembled a Virtual Ambassador (that we will discover ahead) and two normal actors at the drive of a car called "Renault Kadjar".

What if the virtual representations of humans became ambassadors of brands, with a pronounced personality and a relevant tone of voice? What if these virtual ambassadors are an effective marketing strategy that could give competitive advantage to companies? This research aims at being the starting point for answering these questions and understanding this new trend coming to life during our days, studying through self-reports its impact on emotions and the difference in perception between different generations.

2. What is a Virtual Ambassador?

To introduce this research there is a pivotal path that we must follow. To begin with, it is important to outline the marketing online trends in modern society, understand clearly what a Virtual Ambassador is and the similarities and differences with "Influencers" and "Avatars". The word "Influencer" has become of very common use, the role of the influencer is mainly to create awareness and signal benefits to others within their social network and can be particularly influential in encouraging trial and adoption of novel products and

services.⁷⁴ Research studies found that influencer marketing is capable of triggering eleven times more return on investment than other more traditional forms of advertising annually. This added value that the influencer brings in terms of return on investments, is measured analyzing engagement, reach and ultimately sales, proved by the existence of a positive association between the two. Consumers are usually far more inclined to positively relate and react to a message coming from a close friend over a sponsored post, empowered by a company. According to Nielsen, 92% of consumers believe recommendations from friends and family over all forms of advertising.

Another key concepts that deserves to be explained and reviewed is the concept of “Avatar”. Survey research suggests that the most significant inhibitors of online shopping are the absence of pleasurable experiences, social interaction, and personal consultation by a company representative.⁷⁵ A creative and functional approach with the aim of increasing the customer satisfaction and information value of online shopping experiences is the use of avatars. The words etymology comes from the ancient Indian language, Sanskrit, and refers to “descent of a Hindu deity to earth in an incarnate or tangible form,” from Sanskrit avatarana “descent” (of a deity to the earth in incarnate form). This definition evolved during the years and today, in the age of technology, the word has developed another sense. It now describes the virtual image that a person shapes and/or chooses as his or her “embodiment” in an electronic medium. In marketing avatars are mostly used to enhance internet shopping experience, improving the conversion rate of potential customers. Including an avatar during an online interaction between a computer and a human would make it feel more realistic and would enable the human to build also empathy towards the avatar. Recent evidence show that relationships are more likely to develop if the computer technology is represented using human forms.

This being said, a modern and extremely plausible description of a Virtual Ambassador is the merge between an influencer and an avatar, a virtual entity with a personality and a look. In our days, were AI is becoming consistently more realistic and technology is permeating our daily lives always more crucially, there are different examples that may be brought up. A very close phenomena to the latter description is an Instagram virtual influencer called “Lil Miquela”. The main reason why Lil Miquela (1.5 Million followers to date) is referred to as a virtual influencer is because “she/it” is not representative of only one brand, but source of sponsored posts from different firms. Some of the partnerships of this famous CGI influencer have been with Giphy, Prada, Diesel, and Moncler. This is an example of how modern technologies, can change the media sphere. The fascination that Lil Miquela generated on the Instagram community was very high since not long after the account launch in April 2016

Important fashion brands are also starting to employ virtual humans in their advertising. Proof of this is the very recent Instagram ad by Diesel, which, in collaboration with the famous videogame “Days Gone”, created a line of clothing and advertised it through pictures of avatars of their models in a virtual world. The innovations that we just discussed may raise multiple compelling questions. When speaking about marketing, we may ask ourselves: What if the brand ambassador of a company is a non-existing person? What if an AI

⁷⁴ Brown, D., & Hayes, N. (2008). *Influencer marketing*. Routledge.

⁷⁵ (Barlow, Siddiqui, and Mannion 2004; G&J Electronic Media Services 2001)

based virtual profile becomes more emotionally stimulating and exciting than a real person? Can a virtual ambassador possess a distinct personality and accurately portray the company's image? Which generations could potentially be more attracted to a 3D modelled testimonial?

This will be the focus of this research, more precisely our analyzed character will be "Liv", Renault's new virtual ambassador.

3. Renault's Marketing Strategy

"When you think of us you probably think about iconic cars, an international company bolstered by the world's leading automotive Alliance, Formula 1 victories and futuristic concept cars." Renault Team.

Renault's marketing mix has always been forward looking and innovative. It has always succeeded for what regards meeting the technological challenges, creating a product portfolio that is to be envied. Developing an all-around marketing strategy that aims at taking advantage of every tool at disposal, to generate always better visibility. It has launched various ad campaigns through many different channels. We can see Renault's publicity in magazines, billboards, hoardings, motor shows, rallies and public displays. The brand is well aware of the pivotal importance of social media platforms and employs them to displays advertisements, product details, and relevant information via its official website.

4. LIV, Renault's Virtual Ambassador

The famous sociologist Stéphane Hugon affirmed that: *"People have long contrasted relations with what is real and what is virtual. We differentiate between true and false, light and shade, etc. A whole area of our culture is founded on this point"*, according to him this duality will soon be over.⁷⁶

Renault's challenge was to create an advertising campaign, for the SUV called "Kadjar", that had as its ambassador "Liv". They brought Liv to life enabling their objective to become reality. She is a virtual woman protagonist of Renault's publicity, in this campaign she will be faced with an authentic driving experience, gradually becoming increasingly alive and more human. Renault wants to connect the virtual world with the real one, through this very innovative marketing strategy, being the first to create a virtual ambassador in the automotive market. By launching this forward-looking campaign, the aim is to prove the extent to which the onboard experience and feelings are authentic, exhilarating and thrilling, and that even though Liv is entirely virtual, the experience itself is completely real and extremely rewarding. At the beginning of the advertising, the virtual ambassador appears with dull, absent eyes, but, when she begins experiencing the exciting drive at the wheel of the Kadjar, she gradually starts changing. The eyes become brighter, more vivid and energetic,

⁷⁶ Mitchell, W. J. (1994). *The reconfigured eye: Visual truth in the post-photographic era*. MIT Press.

also the face from a static, eventually lights up with vitality and more than real facial expressions, the title of the ad is not by chance "Escape to Real".

It is not the first time that Renault's marketing tries to promote the SUV to the general public, utilizing a storytelling rich of thrilling adventures and emotions. Indeed, on May 23rd, 2018, together with the release of the movie "Solo: A Star Wars Story" in Italian cinemas, they launched a European-wide innovative advertising campaign in collaboration with Lucasfilm, Disney, and Publicis Conseil.⁷⁷

"LIV and Renault Kadjar"



"www.youtube.com"

5. Research

The aim of my preliminary research employing the use of classical marketing methods is to investigate on how respondents consciously interpret their emotions when watching an advertisement. The first metric that I wanted to analyze is Attention.

5.1 Attention (H1)

Theories regarding attention, for instance, capacity theories from Broadbent (1971), and Kahneman (1973), as well as information-processing models (e.g., Greenwald and Leavitt 1984; MacInnis and Jaworski 1989), take in consideration that the attention to an ad is a function of consumers' MAO (motivation, ability, and opportunity).⁷⁸ These three key factors are influenced by consumers' characteristics and the physical properties of the commercial. Physical ad properties, such as illustrations, headlines, characters, music, colors, and products, are deemed to play a pivotal role in captivating consumers' attention. Insights and data regarding the effect of the physical properties of an advertisement on attention are poor, most of them are based on research using memory measures, that is not the most effective.

The persuasiveness of media depends on the active processing efforts of the viewers, Herbert Krugman on his "Public Opinion Quarterly", 1965, outlined the fact that there are two different ways of being influenced and

⁷⁷ <https://giodit.com/2019/01/26/la-prima-virtual-ambassador-dellautomotive-nello-spot-di-renault/>

⁷⁸ Zacks, R. T., & Hasher, L. (1988). Capacity theory and the processing of inferences. *Language, memory, and aging*, 154-170.

experiencing advertising media. One is characterized by the absence or lack of involvement and the other by a high amount of the latter, meaning the number of significant experiences, connections and personal references that a given person makes between their life and the stimulus presented.

A repetition paradigm was used to assess the nature of affective modulation of early and late components of the event-related potential (ERP) during picture viewing.⁷⁹ With a low involvement, a viewer could be more stimulated by repetition activated by behavioral choice situations. With high involvement instead, one could look for the deeper connections stemming from conflicts of ideas at the level of conscious opinion and attitude.⁸⁰ Following this distinction, it has been stated that both types of involvement can be associated with an effective way of building advertising, depending on the strategy that the firm wants to follow.⁸¹

Moreover, previous research has reported substantial differences in overall attention to advertising among consumers, testing various hypotheses regarding the effect of intrinsic and situational causes of personal importance on involvement and on the amount of attention, focus, and cognitive elaboration. Felt involvement is a motivational state that have an effect on the extent of consumer attention.⁸² This suggests that segments of consumers may respond differently to the physical properties of advertisements.⁸³ There is an important distinction to make clear when speaking about attention. Most neuroscientists and researchers agree that the perceptual analysis of the visual world takes place in two subsequent stages (Neisser, 1967). There are two types of visual attention called: pre-attentive and post-attentive attention.

Pre-attentive attention is automatic and parallel, it works on low-level stimulus features with the primary function of delineating objects in the spatial surrounding.⁸⁴ It segments the field into separate objects on the basis of such Gestalt properties (The Gestalt Principles of grouping, “Gestalt” is German for “unified whole” represent the culmination of the work of early 20th-century German psychologists Max Wertheimer, Kurt Koffka and Wolfgang Kohler, who sought to understand how humans typically gain meaningful perceptions from chaotic stimuli around them) as spatial proximity, continuity of contour, shared color or movement.⁸⁵

Post-attentive attention is slow, serial and it concerns more complex inferential and interpretative processes, identifying the located objects in perceptual awareness. When we encounter peripheral significant events

⁷⁹ Codispoti, M., Ferrari, V., & Bradley, M. M. (2007). Repetition and event-related potentials: distinguishing early and late processes in affective picture perception. *Journal of Cognitive Neuroscience*, 19(4), 577-586

⁸⁰ Krugman, H. E. (1965). The impact of television advertising: Learning without involvement. *Public opinion quarterly*, 29(3), 349-356.

⁸¹ Greenwald, A. G., & Leavitt, C. (1984). Audience involvement in advertising: Four levels. *Journal of Consumer research*, 11(1), 581-592.

⁸² Celsi, R. L., & Olson, J. C. (1988). The role of involvement in attention and comprehension processes. *Journal of consumer research*, 15(2), 210-224.

⁸³ Rosbergen, E., Pieters, R., & Wedel, M. (1997). Visual attention to advertising: A segment-level analysis. *Journal of consumer research*, 24(3), 305-314.

⁸⁴ (Duncan, J. (1984). *Selective attention and the organization of visual information. Journal of Experimental Psychology: General*, 113(4), 501.)

⁸⁵ (Öhman, A., Flykt, A., & Esteves, F. (2001). *Emotion drives attention: detecting the snake in the grass. Journal of experimental psychology: general*, 130(3), 466.)

ongoing processing may be interrupted and postattentive processing may be prioritized (Ohman, 1979). This stimulus-driven call for processing resources is associated with phasic psychophysiological activation manifested as orienting responses, which facilitates further sensory processing of the stimulus.⁸⁶ It focalizes on a particular object more in detail and thus is responsible for our limited ability to see several objects at once.

The channel where the commercial in analysis is mostly divulged is Television. Communication research suggests that an audiovisual format may present a unique aspect of information presentation because of the interaction between visual and verbal display. More in detail some characteristic of animation, such as visual action, fast pace, and sound effects, have consistently proven to increase attention in younger generations.

Researchers have suggested that the attention-attracting ability of audiovisual information relates to the complexity of the message stimulus (Wartella and Ettema 1974; Watt and Welch 1983; Welch and Watt 1982).⁸⁷ Visual complexity typically refers to the number of objects or movement of objects in the visual field (Alvarez et al. 1988; Huston et al. 1981; Watt and Welch 1983; Welch and Watt 1982). Auditory complexity is often conceptualized as the number of changes in the level of frequencies, as well as the number of different sounds heard on the channel (Thorson, Reeves, and Schleuder 1985; Watt and Welch 1983). Complex stimuli are more perceptually salient, so they can more effectively captivate younger generations' attention. Animated advertising has the possibility to be more attractive for vivid colors, fast movements and sound effects associated with animation embody perceptual salience. The high level of perceptual salience may explain why an animated character associated with a product is likely to draw the attention of younger people.⁸⁸

Thus, having analyzed attention and its application in understanding advertising effectiveness, I decided to develop the first hypothesis to understand the perception that respondents have on the two Renault commercials.

H1: The attention will be higher for respondents who watch the Virtual ambassador advertisement, rather than the Real Humans one.

5.2 Arousal (H2)

Arousal has been classically defined in different ways, it has been seen as the tension, activation, energization or alertness of the inner state. Activation is a basic variable of human behavior, it gives energy to the organism and it is responsible for its motor and physiological activity. In neurophysiological theories activation is described as the result of physiological processes that appear in the central nervous system. Arousal is raised

⁸⁶ (Öhman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: detecting the snake in the grass. *Journal of experimental psychology: general*, 130(3), 466.)

⁸⁷ Welch, A. J., & Watt Jr, J. H. (1982). Visual complexity and young children's learning from television. *Human Communication Research*, 8(2), 133-145.

⁸⁸ Neeley, S. M., & Schumann, D. W. (2004). Using animated spokes-characters in advertising to young children: Does increasing attention to advertising necessarily lead to product preference?. *Journal of Advertising*, 33(3), 7-23.

by stimulating a subcortical unit of our brain known as the reticular activation system together with the correlated limbic system, both located in the brain stem.⁸⁹ In terms of neuroscience, it has been defined as a diffuse and general state of cortical alertness following sensory stimulation or some internal thought process. All of the former definitions have in common that arousal is a mental and physiological activation of the organism.

An important characteristic that is necessary to underline when speaking about emotional responding to advertising is the strong connection between pleasure and arousal, and the effect of creative commercials. According to the bio-informational theory of emotion (Detenber and Reeves 1996; Lang 1995), pleasure and arousal exhibit high correlations, in which the reactions that take place between the two metrics are described as the reflection of motivational activation, Singh, S. N., & Churchill Jr, G. A. (1987).⁹⁰

Arousal reactions are coordinated by two motivational systems that are called Appetitive and Defensive systems. They regulate how respondents react to different environments. Furthermore, arousal reflects motivational activation, reactions indicate whether the appetitive or the defensive motivation is activated and the intensity of motivational activation and behavior (Bradley et al. 2001a; Lang, Bradley, and Cuthbert 1998).⁹¹ It is for these reasons that the questions of the survey (that we will see ahead) are based on excitement, happiness, and stimulation.

Any psychological event establishes a strong trace in the brain, which lasts for a period, named of "consolidation". During the consolidation period, long-term memory is established. According to action decrement theory then, high levels of arousal lead to longer-lasting memory traces, and hence greater long-term memory, but also to greater initial retrieval inhibition.⁹²

In my research I also introduced a metric to test the perceived irritation and boredom towards the commercial. In these terms, the famous scholar named Russell locates annoying in the unpleasant dimension, together with low arousal and anger, but the latter usually raise high levels of arousal. This suggests that the two affects could be treated separately if necessary. In the advertising literature, anger appears as part of Wells et al.'s irritation ("irritating"), Schlinger's alienation ("irritating"), and Aaker/Bruzzone's dislike ("irritating") in the low-intensity level of irritation.⁹³

For what regards television commercials, it has been deeply researched by Heeter and Greenberg (1985), Yorke (1985) and Lin (1994) that potential customers very commonly avoid them by changing the channel. It is also important to mention the fact that in our days, new technologies such as social media, video-on-demand and direct broadcast, greatly increased marketing and advertising options. This could be one of the reasons

⁸⁹ Kroeber-Riel, W. (1979). Activation research: Psychobiological approaches in consumer research. *Journal of Consumer Research*, 5(4), 240-250.

⁹⁰ Arousal and advertising effectiveness. *Journal of Advertising*, 16(1), 4-40.

⁹¹ Getting a line on print ads: Pleasure and arousal reactions reveal an implicit advertising mechanism. *Journal of Advertising*, 37(4), 63-74

⁹² Singh, S. N., & Churchill Jr, G. A. (1987). Arousal and advertising effectiveness. *Journal of Advertising*, 16(1), 4-40.

⁹³ Batra, R., & Ray, M. L. (1986). Affective responses mediating acceptance of advertising. *Journal of consumer research*, 13(2), 234-249.

why TV advertising is avoided, but it is still a very powerful tool for promotion. However, due to the high incidence of commercial avoidance the reality of facts is that viewers attitude towards television ads is negative. Therefore, marketers are highly interested in discovering the potential emotional effects that customers may experience, together with their attitude towards the ad and the brands. Reinforcing this theory is the fact that studies of brain activity during image processing have reported high positive voltage variations in brain potentials related to respondents viewing emotional contents.⁹⁴ This positive wave forms, clearly discriminating affective from neutral pictures, begins within a few hundred milliseconds after stimulus onset and may be sustained for several seconds.⁹⁵

Pleasant pictures rated high in arousal are associated with more event-related potential positivity than pictures rated lower in arousal. Emotionally arousing stimuli trigger the brains motivational circuits fastly activating sustained attention.⁹⁶ It is pivotal for advertisers and video makers to know the elements of the commercials that need to be manipulated to positively affect the viewer attitude and increase their motivation and willingness to pay. For reasons of practical purposes, arousal is one of the best metrics to examine the effects of message variables under direct control, since the consumer variables are more difficultly controlled by advertisers. More specifically, content arousal is a valuable metric found to affect viewers allocation of processing resources. It refers to how exciting or calm a message is perceived by a viewer (Lang et al. 1996) and it is likely to be related to emotional appeals in advertising.

Cacioppo and Petty (1989) spent years studying emotional appeals in persuasive advertising messages and affirmed that it can lead to a change in attitude of viewers. Their findings refer to the area of message repetition in advertising, outlining the fact that the persuasiveness of an ad at first increases when repetition increases, but then it radically wears out. This wear out, is determined by the negative reaction of respondents after the frequent presentation of a stimulus. Together with Gordon and Goldberg (1980), they support the fact that moderate repetition can be a pro or a con, depending on the attitude that recipients have towards the message presented and their own knowledge on the issue. It is important to pre-test commercials because these negative attitudes towards the stimulus after a moderate level of exposure to ads are detectable, and given the cost of media bad advertising should be eliminated prior to public exposure.⁹⁷

Thorson and Friestad (1989) tested this suggestion by making respondents evaluate television commercials, categorized on their level of emotional content.⁹⁸ Results showed that highly emotional ads were liked best and non-emotional ads were liked least. Research has also specifically tested the effects of emotional appeals,

⁹⁴ Diedrich, O., Naumann, E., Maier, S., Becker, G., & Bartussek, D. (1997). A frontal positive slow wave in the ERP associated with emotional slides. *Journal of Psychophysiology H*, 71, 84.

⁹⁵Palomba, D., Angrilli, A., & Mini, A. (1997). Visual evoked potentials, heart rate responses and memory to emotional pictorial stimuli. *International journal of psychophysiology*, 27(1), 55-67.

⁹⁶ (Schupp, H., Cuthbert, B., Bradley, M., Hillman, C., Hamm, A., & Lang, P. (2004). Brain processes in emotional perception: Motivated attention. *Cognition and emotion*, 18(5), 593-611).

⁹⁷ Cacioppo, J. T., & Petty, R. E. (1989). Effects of message repetition on argument processing, recall, and persuasion. *Basic and Applied Social Psychology*, 10(1), 3-12.

⁹⁸ Thorson, E., & Friestad, M. (1989). The effects of emotion on episodic memory for television commercials.

showing that emotional ads lead to more positive attitudes.⁹⁹ Both the commercials that were chosen for this research have emotional appeals in their storytelling. In particular, the one portraying Liv (the virtual ambassador), is modelled on the emotions of the ambassador, showing the eyes and pupils of Liv that become always more real and telling with words how the driving experience is exciting and unique.

High arousal programs produce an assimilation effect for which evaluations of commercials are enhanced subsequent to the presentation of pleasant programs and reduced after unpleasant ones. Contrarily, programs with low levels of arousal produce a contrast effect whereby commercial evaluations are enhanced after unpleasant programs and depressed after pleasant ones.¹⁰⁰

Animation is nowadays one of the most outstanding attention-getting and arousal-provoking methods used in Web advertising, but the scenario is changing and that is not the only channel where it is being used. Indeed, animated ads have been found to elicit stronger orienting responses by Lang et al. in 2002, faster click-throughs (Li and Bukovac 1999), higher arousal (Heo and Sundar 2000a), better memory for ad content (Heo and Sundar 2000b; Lang et al. 2002; Li and Bukovac 1999), and more positive attitudes toward both the ads (Kalyanaraman and Oliver 2001). As a feature of the new medium, animation has proven to be a powerful tool for generating captivating advertising effects. It is for this reason, that most Web ads are animated rather than static and the trend is growing and expanding.¹⁰¹ Having analyzed attention and its application in understanding advertising effectiveness we arrive to the second hypothesis.

H2: Arousal reports will be higher for respondents who watch the Virtual Ambassador advertisement, rather than the Real Humans one.

An important assumption to make is that Renault's commercial, built with this innovative technique and style, could be more appealing to the younger generations (Generation Y/Millennials, Generation Z), rather than older generations (Generation X and Baby Boomers).

5.3 Age (Moderator)

Every different generation has a unique lifestyle, expectations, and values that influence their purchasing behaviors. Many companies are trying to expand their offers to all the generations, attracting their attention through different techniques. This method is called "Multi-generational marketing", and it is the practice of satisfying the needs of customers in different generational groups.

⁹⁹ Yoon, K., Bolls, P., & Lang, A. (1998). The effects of arousal on liking and believability of commercials. *Journal of Marketing Communications*, 4(2), 101-114.

¹⁰⁰ Broach Jr, V. C., Page Jr, T. J., & Wilson, R. D. (1995). Television programming and its influence on viewers' perceptions of commercials: The role of program arousal and pleasantness. *Journal of Advertising*, 24(4), 45-54.

¹⁰¹ Sundar, S. S., & Kalyanaraman, S. (2004). Arousal, memory, and impression-formation effects of animation speed in web advertising. *Journal of Advertising*, 33(1), 7-17.

The majority of respondents of the survey belong to Generation Y (Millennials) and Baby Boomers. Millennials were raised in an era of fast and huge changes also due to the multitude of family types ethnic and culturally wise, and the technological revolution. They were born into a technologically advanced society that is bringing down global boundaries, enabling faster and easier communication. In terms of marketing, Millennials are attracted by creative media and promotions, companies that want to attract their attention must target this generation by placing an advertisement in appropriate channels such as Internet sites, TV, radio programs and video games through “advergaming”.

Consumers belonging to Generation Y are often early adopters of new technologies and are the major users of the internet. According to Yarrow and O’Donnell, Generation Z and Millennials are twice more likely than the elder generations to use mobile devices for different tasks as shopping online, coupons and promotions.¹⁰²

However, Generation Y individuals watch less television and are less influenced by classical media channels. They are much more reluctant to commercials that appear in a more mainstream media, they also respond to advertisement differently, preferring to encounter them in social media or internet sites.

The Baby Boomers, in terms of communication, like facts, which help them to take decisions and information presented in terms of options. Public recognition and personal gratification are important to them. One of the media channels that is still major to gain their attention is television, due to the fact that they prefer direct language and communication. Brands must build their commercials using positive and emotionally meaningful concepts, words and images using storytelling. Their environmental consciousness is increasing like their will to be sustainable, but they desire to save by green products followed by environmental benefits as a payoff. While the younger Boomers are less idealistic than they once were (Rock, 1995), and are easily turned-off by advertising, stores, and shopping malls that attract young people (Russell, 1997).¹⁰³

The concepts analyzed above will be useful to understand the procedure used to bring the research forward that will be outlined in the next section.

6. Interviews

To attain preliminary information for what regards the previously examined hypotheses, I performed ten interviews discussing with the respondents, their felt emotions and attention. I showed them two commercials powered by Renault, both created to promote the SUV called Kadjar. One resembles Liv, the Virtual Ambassador, and the other two real actors.

The sample constitutes of ten respondents, five of them belong to the Baby Boomers Generation (born between 1946 and 1964), and the other half belongs to the Millennials Generation (born between 1981 and 1996). I followed an informal communication method to ascertain the sincerity and the tranquility of the viewers. The

¹⁰² Yarrow, K., & O'Donnell, J. (2009). *Gen buy: How tweens, teens and twenty-somethings are revolutionizing retail*. John Wiley and Sons.

¹⁰³ Roberts, J. A., & Manolis, C. (2000). Baby boomers and busters: an exploratory investigation of attitudes toward marketing, advertising and consumerism. *Journal of Consumer Marketing*, 17(6), 481-497.

older respondents were reached through word of mouth and the younger ones in universities. At the beginning of the interview, I asked them if they had a basic knowledge of the English language because both commercials were presented in English, the respondents that did not fulfill this requirement were not selected.

In the first place, I outlined to the respondents what they were about to see, asking them to be very concentrated for the lasting of both commercials. After they viewed the two publicities, I asked them to describe what they saw outlining the story of the commercials, subsequently, they were posed questions for what regards the level of Arousal. They were asked which of the two advertising they liked the most and why, next, which of the two stimulated and excited them the most, if they found one of the two or both advertising irritating and if they felt wide awake or calm while watching.

Subsequently, they were asked questions on their Attention level. I asked them in which of the two commercials they paid more attention to the driver, testing their answers observing if they remembered features of both drivers asking them for example the sex of the driver, if he/she wore sunglasses and the color of the eyes. To conclude they were asked which of the two ads could push them more to evaluate the purchase of the car. All of the respondents belonging to the Millennials sample, registered a self-reported level of attention higher for the Virtual Ambassador advertising as hypothesized in my H1. They reported that the eyes and the experience of the protagonist driving the Renault Kadjar were more captivating, always remembering the color of the ambassador's eyes. Also in the Baby Boomers sample, the Attention level was reported as higher but not for all of them, but, also the ones that did not report these types of data remembered that the eyes of the ambassador were brown and not that the male actor wore sunglasses.

For what regards the arousal levels, most of the respondents of both generations said that they liked and felt more stimulated when looking at the advertising resembling real actors. Their explanations were similar, they felt that the storyline of this commercial was more emotional and close to a problem of our society. Contrarily to my second hypothesis the results of the self-reported arousal levels, tell us that it was higher for the real humans commercial, even though one respondent of each sample reported to be more stimulated by the virtual ambassador one. The last question, regarding the purchase intention, gives us some insights that further research must be performed because most of the respondents reported that the virtual ambassador advertising was more effective in making them evaluate to buy the SUV .

7. Survey

7.1 Procedure

The Independent Variables of this research will be the two Renault commercials mentioned above. As Dependent Variables for this research, I exploited Attention and Arousal, to analyze how the respondents sensed their emotions viewing the commercials. I asked several seven-point likert-scales type of questions on the level of self- reported Arousal and Attention. Examples of questions asked to test the Attention are, “How much attention did you put on the driver?”, “How much did you focus on the driver?”, “How much did you

feel involved?” and “How much did you notice the driver?”. The likert-scale goes from 1= “Not at all” to 7= “Very much”. For what regards Arousal examples of the likert-scale questions asked are, “1= Relaxed/ 7= Stimulated”, “1= Sleepy/ 7= Awake”, “1=Calm/ 7= Excited” and “1= I did not like it/ 7= I liked it”. Age is the moderator for this research, hypothesizing that younger respondents would be more positively moved by the Virtual Ambassador advertisement rather than older ones.

To collect the data suitable for the analysis, I conducted an online survey grouping a population of 282 respondents. 82 of them did not complete the questioner, the two commercials were reported in English, so at the end of the survey I asked if the respondents had a basic understanding of the English language, if not the responses were excluded, 2 of them recognized that they did not possess this requirement. At the end of this control, the total of the complete responses amounts to 198. Their age varied from 17 to 65 years old, the mean age is 28,11 years old. The survey was composed of 12 questions 2 videos. The two videos were randomized equally through the respondents, resulting in fifty percent of them watching the Virtual Ambassador commercial and the other half were faced with the Real Actors one. The distribution method of the survey varied from social media (Facebook and Instagram), E-mail and word-of-mouth, all the responses were gathered in a two weeks' time period.

7.2 Results

The first step to analyze the results of the survey was to check the reliability of the scales used. The first variable to be tested was Attention: Cronbach's Alpha values are greater than 0.6 (CA=0.799), which indicates that the scales show good reliability. For what regards the second independent variable, Arousal: Cronbach's Alpha values are greater than 0.6 (CA= 0.743), which indicates that the scales show good reliability. Following the reliability analysis, to test what effects my conditions had on both Attention and Arousal, a two-way Anova was performed for both the independent variables, showing contrasting results.

For what regards Attention, the Anova revealed that the predicted values show that the respondents recognized to pay more attention to the virtual ambassador commercial rather than the one with real actors. As shown by the results, Model F (1,196) = 35.127, $p < 0.05$, the fact that “Sig.” has a value that is lower than “0.05”, shows that the study has statistical significance. We can also see, that in the “Descriptives” table, the mean of the virtual ambassador commercial (Mean = 3.2640), is higher than the real actors commercial (Mean = 2.7122), which indicates that the majority of the respondents answered with a higher value on the likert-scale. The same procedure was brought forward to test Arousal. As shown by the tables above, Model F (3,186) = 0.9248, $p > 0.05$, due to the fact that the “P-value” is higher than “0.05” the model is not statistically significant. Also the condition (Condio) and the moderator (AgeBinom) have “P-Values” higher than “0.05”, respectively ($p = 0.7375$ and $p = -0.4048$), their relation is not statistically significant. Since the “P-Value” is not inferior to “0.05”, we do not reject the null-hypothesis.

To test the two independent variables in correlation, the analysis followed with the computation of a two-way Manova. But, before this, the correlation between the two variables had to be tested. The relation between

Arousal and Attention is positive ($r = 1$), even though the strength of this correlation is weak, in spite of this fact we can compute the two-way Manova.

For what regards Arousal, the results were the same, $F(1,188) = 2.115$, $p > 0.05$, showing no statistical significance, but we can observe that the Mean for the virtual ambassador commercial is slightly higher (Virtual = 3.4158, Real = 3.2421), this suggests that the respondents gave slightly higher results on the likert-scale questions for Arousal. Also with the two-way Manova, our second independent variable (Attention) shows statistical significance, $F(1,188) = 31.066$, $p < 0.05$, also the Mean for the virtual ambassador commercial is higher (Virtual = 3.2441, Real = 2.7221), suggesting the fact that the respondents felt more captivated by the Renault advertisement resembling Liv.

In spite of the fact that self-reports are not the most effective way to test Attention and Arousal elicited by advertising, as mentioned above, results show that there was a significant difference for what regards the attention generated by the two commercials. This represents a good base to bring forward a more in-depth research with Neuromarketing methods.

8. Neuromarketing Methods

8.1 Eye Tracking

What is useful to understand for this study, is how eye movement works in respect to ads. It involves fixation, where the eye is stable, and saccades, where the eye moves between fixation locations to redirect gaze.

Two important metrics of eye tracking are attention selection and attention engagement. The first means to bring a desired point of advertisement into the focus of attention, reflected in at least one eye movement to fixate it. Attention engagement instead, is the attention sustained on a preselected point, it has duration and intensity components. The extent of the attention is reflected in a longer duration of the gaze, achieved by refixation, as outlined by Russo and Leclerc in 1994. Conversely, the intensity of attention has been attributed to the change of pupilar diameter, when it becomes larger, it captures more light ensuring a better vision.¹⁰⁴ Eye tracking measures are gaze and fixation points, which indicate the time that a viewer's spends looking at a specific point, pupil dilation, eye movement and blink rate. They also give insights about the sequence of observed points.

8.2 Electroencephalography (EEG)

For the purpose of testing Arousal, the second independent variable, there are different neuromarketing tools that are applicable and effective. Electroencephalography (EEG), is the first that would be pivotal to apply for future research, it is one of the most used techniques in neuromarketing research. It registers brain waves

¹⁰⁴ (Pieters, R., & Wedel, M. (2007). Goal control of attention to advertising: The Yarus implication. *Journal of consumer research*, 34(2), 224-233.)

variations produced by the cortex, amplitude of the brainwaves corresponding to different mental states like alpha waves for relaxation, beta waves for wakefulness, theta waves for calmness and delta waves for sleepiness. Morin (2011) states that measures of alpha-waves in the frontal left lobe point out positive emotions, this is a great predictor for motivation. Moreover, it can also measure excitement, emotional valence, cognition, approach and avoidance, very important metrics in the neuromarketing field. Ohme et al. (2011) EEG has become a very popular method because it presents many advantages, it is relatively inexpensive and it has high temporal resolution. It is a non-intrusive method, it is a portable device, it can record brain activity in many different circumstances and allows comparisons between left and right hemispheres (Plassmann et al. 2011), measuring approach-related tendencies (left-hemisphere dominance, positive emotional responses) or withdrawal-related tendencies (right-hemisphere dominance, negative emotional response).¹⁰⁵

8.3 Galvanic Skin Response (GSR)

The second very important method for the purpose of analyzing Arousal is Galvanic Skin Response (GSR). Skin conductance is based on the analysis of subtle changes in galvanic skin responses (GSR) when the autonomic nervous system is activated (Ohme et al. 2009), measuring arousal.¹⁰⁶ It presents many different advantages, the technology makes possible to measure the degree of true arousal, predicting the possible market performance better than self-reports. It is easy to transport and relatively inexpensive, it can be used in combination with heart and respiration rate detectors. As a downturn it cannot determine the valence of an emotional reaction, for example, it can't distinguish excitement and stress because they look very similar.

9. Managerial Implications & Conclusions

Generating copies or creating influencers, models and ambassadors with CGI technology is a growing trend, we can infer this from all the successful examples mentioned at the beginning of the research. This new “modus operandi” presents many advantages, and it is for this reason that further research is essential. But, before outlining the reasons why this is so important, one of the first thoughts that may come to mind is “what about ethics?”. Some may argue that developing CGI characters could possibly overtake the job of being a model. After some research, it was evident that this argument is still not discussed, also because this practice is still not so preponderant. However with examples like “Liv” and “Diesel x Days Gone” we can figure out that the characters of the ads were not generated from scratch but by modeling them on actual human beings. This method is used also in movies, and it does not preclude actors from working.

¹⁰⁵ Bercea, M. D. (2012). Anatomy of methodologies for measuring consumer behavior in neuromarketing research. In *Lupcon Center for Business Research (LCBR) European Marketing Conference*.

¹⁰⁶ LaBarbera, P.A. & Tucciarone J.D. (1995). GSR reconsidered: A behavior-based approach to evaluating and improving the sales potency of advertising. *Journal of Advertising Research*, 35, 33-53.

Moreover, another important factor to consider is that a virtual ambassador could provide a “face” to brands that belong to industries that historically did not contemplate testimonials in their marketing strategies, like for companies belonging to the technological market, as an example we can mention, “Microsoft”, “Intel” or “HP”. This type of brand could create their ambassador that may represent them on social media, billboard and video advertising. Imagine “Amazon” giving life to its “Alexa” providing her a face and a body, enhancing her communication potential. This practice could improve dramatically this firm’s marketing strategies bettering their image conceiving the virtual ambassadors to mirror the company’s personality and tone of voice. Aaker (1997) studies suggest that the best way to approach the consumer–brand relationship is through the concept of personality because consumers have a common tendency to humanize brands.

Contrarily to what could be with a celebrity or a model, the virtual ambassador presents the great advantage of “control”. There are various studies that describe how consumers tend to be sensitive to how brands react when their ambassadors behave in a bad manner. The most preponderant examples of these events are when Gatorade, AT&T and Accenture ended their contracts with Tiger Woods after the infidelity scandal in 2009, Knittel and Stango (2010) estimated that it produced around \$12 billions of shareholder losses. However, his actions appeared clearly less serious than the allegations surrounding Olympian Oscar Pistorius, whose murder charges generated quick disavowals from co-brands such as Nike and Oakley. Implementing a strategy that includes the creation of a virtual ambassador, companies should not be worried of damages to their image that could be brought by the bad conduct of their testimonials, because they could create and control the ambassador in the way they consider most suitable for their brand.¹⁰⁷

An advertising strategy that relies on the implementation of an ambassador aims at creating emotional connections with the consumers.¹⁰⁸ Thus, marketers should ensure that the ambassador’s image and personality fit the nature of the brand.¹⁰⁹ Selecting the celebrity or model that will be the company’s testimonial can constitute a risk of negative impacts on the brand, through the implementation of these new virtual ambassadors the risk would be virtually non-existent (Louie and Obermiller, 2002). Due to the fact that we live in a world characterized by a fast-paced technological growth, the exploitation of this new trend could be an innovative source of competitive advantages for many companies. This preliminary study provides the basis for further research regarding the arousal, attention and other psychological dimensions that could be triggered by a commercial with a virtual ambassador, in comparison to real actors. To ensure statistically significant data, future studies should be performed with Neuromarketing method, comprising electroencephalography, galvanic skin response and eye tracking, a definitely more reliable way to test these variables.

¹⁰⁷ Ambroise, L., Pantin-Sohier, G., Valette-Florence, P., & Albert, N. (2014). From endorsement to celebrity co-branding: Personality transfer. *Journal of Brand Management*, 21(4), 273-285.

¹⁰⁸ McCracken, G. (1989). Who is the celebrity endorser? Cultural foundations of the endorsement process. *Journal of consumer research*, 16(3), 310-321.

¹⁰⁹ Erdogan, B. Z. (1999). Celebrity endorsement: A literature review. *Journal of marketing management*, 15(4), 291-314.