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**Neuromarketing: Evaluation of Cognitive and
Emotional Responses of Consumers to
Marketing Stimuli and its impact on health
with a focus on Eating Disorders.**

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INTRODUCTION

The field of Artificial Intelligence (AI) was born in 1956 at a workshop organised by John McCarthy, American computer and cognitive scientist. AI is defined as the intelligence machines can have, which is opposed to the one of non-human animals and humans: it is the simulation of human intellectual processes by computer systems. Many of the basics of AI come from Alan Turing, English mathematician and computer scientist, who wrote, in his "*Computing Machinery and Intelligence*", that imagining the possibility of computers simulating the intelligence of individuals was possible. Moreover, he mentioned the eventuality of having machines automatically learning. As already written, the goal was to find ways in which it was possible to simulate the human's intelligence and ability to think. The main areas in which AI works are reasoning, knowledge representation, learning, planning, perception, and manipulation of the surrounding reality.

With the passing of time, artificial intelligence has developed both at the advantage and disadvantage of people, as this thesis will demonstrate. We have allowed machines to enter our innermost part, our brain, whose functioning is still, in its majority, a mystery. This (the brain) is investigated not only for health-related purposes, but also for economic-related ones. This intrusion is to be considered as twofold: on the one hand, it is positive, in fact, thanks to new discoveries, many neurological diseases either have a cure or are object of medical research for future improvements; on the other hand, as many know, "every excess is a defect". The latter expression testifies that entering realms that should not be dominated by men is not always for the best. A clear example is the one that will be discussed in this thesis: side effects on health.

As mentioned before, the human inner activity is also analysed for economic reasons. Let us begin with the definition of "doing business", so to say, having a commercial activity, which results in profit, financial

gain. Through money, people satisfy their preferences; the more money they have, the higher number of desires they can fulfil.

It is necessary to consider the market-environment in which we are living nowadays, characterised by competitiveness between companies selling similar goods and services. A firm must stand out from others based on quality, price, sustainability, etc... To render it possible, visibility is needed and given to products thanks to marketing, so to say the promoting, research, and advertising activity.

Neuromarketing is an emerging field of study based on neuroscience, marketing, and psychology. Nowadays, it is increasingly used to allow the supply side of the market properly and profitably match the demand side, thanks to the advances in technology that have been happening in the last decades.

Neuromarketing is based on behavioural economics, which studies the effects of emotional, cognitive, social, and psychological factors on the decisions of individuals. The aim of neuromarketing is the understanding of consumers' preferences and choices through the study of their own behaviours. The priorly-mentioned investigation is performed at the advantage of the supplier to increase her/his profit.

Neuromarketing uses neuroscientific specific methods namely electroencephalography (EEG), Transcranial Magnetic Stimulation (TMS), Magnetoencephalography (MEG), Functional Magnetic Resonance Imaging (fMRI) and Positron Emission Tomography (PET). Moreover, techniques as eye-tracking or assessment of the heart rate are employed.

This thesis will analyse the nature and characteristics of neuromarketing, the reason why it was invented and used and the consequences it has on consumers. We will discover the effect that publicity campaigns have upon the general public and on its health. There will be a focus on eating disorders as a phenomenon incentivised by some marketing experts through their designed marketing strategy.

This thesis will be divided in five substantial chapters plus an initial introduction and final concluding remarks and bibliography.

The first chapter will define neuromarketing as an area devoted to the application of neuropsychology to market research as to improve the perception and impact a product has on the consumer. The final goal for industries is clearly the one of profit. The latter is gained through the study, performed by marketing experts, of consumers' responses to marketing stimuli. A special focus will be made on emotions as the element shaping and influencing our decisions. Therefore, it can be said that the feelings that commercials may generate in the viewer could influence his/her decision-making process through the manipulation of the person at the interest of the company.

The second, technical, chapter will deal with the techniques used in neuromarketing: Electroencephalography, Functional magnetic resonance imaging, Magnetoencephalography, Transcranial Magnetic Stimulation, Positron Emission Tomography, The Implicit Associations' Test. A comparison between these ones will be performed.

In chapter number three, I am going to analyse the topic of ethics. First, there will be a definition of ethics. This discussion is very intriguing because among others, it focuses on the independency of costumers in their decision-making process despite companies using neuromarketing technologies. Are consumers truly independent or do they act and choose how others want them to do? An answer to this question will be found. The issue of ethics will also focus on four points: 1) fears about the privacy of consumers; 2) misuse of information obtained in the neuro research and search for the weakness of the consumer; 3) generalization of results; 4) the use of the neuromarketing research at the disadvantage of the consumer. Later on in this chapter, we will quickly deal with the theme of privacy. Then, I am going to focus on the acting manners pertaining to some companies influencing the consumer to make him/her buy certain products with negative consequences on health, bypassing privacy. Here, neuroscience is used at the disadvantage of people. The side effect that has been developing during these last years is the one of eating disorders.

In chapter four the Belmont Report will be analysed. It is one of the most important documents dealing with the ethical principles for the protection of human subjects of research. Respect of people, beneficence, justice will be some of the main topics covered.

In the fifth chapter, eating disorders will be defined and a discussion on the marketing strategies employed causing this situation will be performed. Examples will be suggested: the use of thin models in marketing campaigns, perceived as more attractive than others leading, as evidence shows, to an effective selling strategy.

Conclusions will suggest to diminish the issue of ED (eating disorders) that has been discussed in the last chapters. I will sum up the key points of the thesis and highlight the negative effect neuromarketing has on health.

Lastly, the bibliography will be inserted.

CHAPTER ONE

Neuromarketing is a term first coined by Professor Ale Smidts, Professor of Marketing Research at the Rotterdam School of Management, and results from the “neuromania” phenomenon: the will of many to embrace neuroimaging techniques and explain human behaviours and conclusions.

It is an area of study devoted to the application of neuropsychology, which aims at investigating into brain-behaviour to market research, to improve the perception and impact a product has on the consumer and to increase profit. It tries to provide a better understanding of the costumer’s behaviour.

It is also defined as an “interdisciplinary field, situated at the borderline between neuroscience, psychology and marketing; it focuses on assessing consumers’ cognitive and emotional responses to various marketing stimuli” [Karmarkar, 2021]. Its multifaceted characteristic is composed by a combination of neuroanatomy, which explains the anatomical structure of the brain; neuropsychology, which deals with the relationship between the nervous system’s functions and the human behaviour; neuroendocrinology, which explores links between hormones and the above-mentioned system; neurology, which studies the system and its possible diseases; cognitive neuroscience, focusing on neuro-processes and the human mind; and, finally, neuroeconomics and neurofinance, concerning the decision process of economic subjects related to the impact of social, emotional and cognitive factors on their economic attitude.

In “Introduction to Neuromarketing and Consumer Neuroscience”, Ramsøy sees this phenomenon (neuromarketing) as a commercial exploitation of neuroscientific knowledge.

Neuromarketing technologies discover attitudes of consumers that are not detected by traditional marketing and can have a positive impact both on the seller and buyer.

Psychological findings suggest that consumers give importance to information coming along their person, therefore, marketers have to enter their (consumers') long-term memory to shape the value they (consumers) give to the advertisement and gradually change their lifestyle and preferences.

The word "neuromarketing" is composed by "neuro" and "marketing". The latter means "[...] the performance of business activities that direct the flow of goods, and services from producers to consumers" [American Marketing Association]: it is a process aimed at attracting the interest of the consumer on a product in an increasingly competitive market. This happens through market and behaviour research. Paired with neuroscience, i.e., the science studying the behaviours of the nervous system, the fulfilment of the previously mentioned objective (the attracting of consumers) is achieved.

What has been discussed so far is based on behavioural economics: marketers create realities nudging, so to say pushing, people towards the acquisition of their goods, avoiding the "problem" of the free will of consumers in their decision-making process. The above-mentioned field of study, as far as Lindstrom is concerned in his writings, (behavioural economics) focuses on humans' interiority, accessing their unconscious thoughts and feelings triggering our purchase choices.

Before proceeding with the dissertation, it is crucial to refer to the three types of existing choices the individual can make, namely, deliberate, unconscious and emotional ones.

The first type refers to those decisions which are made based on full information about the issue at stake, costs and benefits (both present and future), budget constraints, alternatives and personal preferences. They are the result of a conscious and rational decision-making process.

The second one (unconscious) is characterised by those decisions which are based on experience and routine, with no evaluative features.

For instance, people who drink coffee every morning, as soon as they get up, are making unconscious decisions. The latter is the result of doing the same activity for years, namely, a habit.

There are cases in which decisions are the result of certain marketing behaviours exploiting human feelings: emotional decision making is the one driven by emotions and usually shaped by (neuro-) marketing. Emotional marketing is done to engage consumers' emotions and form a deeper connection between brands and buyers. For the sake of clarification, let us think of publicity campaigns whose objective is raising money for poor children in Third World Countries. They (children) usually appear so as to provoke a sense of protection and duty in the viewer; there are usually no adults involved because they are not as beneficial to the purpose. This view activates our brain provoking tenderness, sadness and sentiments pushing us to give the amount of requested money. This would be different if no images were inserted: the marketing activity relies on the conviction that a certain vision will direct people towards a specific direction. Decisions, here, are guided by the aroused emotions, tool used by marketers.

At this point, therefore, attention must be solely drawn to the human emotion: "conscious mental reaction [...] towards a specific object and typically accompanied by psychological and behavioural changes in the body" [Merriam-Webster Dictionary]. Emotions lead our decisions and have a strong influence upon them: usually, the higher is the emotional engagement, i.e., the higher the marketing stimuli is, the more attracted people are towards what is causing it, the higher probability is there for the consumer to be inclined to acquire the good. Consequently, it is also possible to predict and direct acquisition decisions: a campaign whose marketing exploits and leads people's emotions will be more successful than others.

The relationship between emotions and neuromarketing tools generates, in many cases, the success of an industry.

Ariely and Berns found out that companies use the above-mentioned technologies for two reasons. First, they hope to have an efficient trade-

off between benefits and costs based on the assumption that people do not truly possess full knowledge about their true preferences, which are hidden. The turning point is the manoeuvre of this unknown part at the advantage of the industry through printed advertisement or commercials. Second, marketing experts hope to find methods to be implemented even before the existence of a product. In this paragraph, we understand, once again, that neuromarketing enters the production side through proposing the product and obtaining feedback from consumers after it is sold.

It is important to highlight the role of preferences in this dissertation. They are a process, carried out by the individual, leading to the best possible choice, given the utility of all alternatives. Preferences are determined by the consumer's tastes, income, and availability of goods, which are due to the individual's self-interest.

Consumers are said to be rational decision-makers: they have full information and understanding; they gather facts, identify options and outcomes, analyse them, and select the optimal bundle. Despite this fact, this assumption does not always hold true and neuromarketing is a testimony: people, in many cases, are no longer "rational" in the process because their decision-making skills are biased by marketing tools, influencing, not always at their best, their preferences. Scheier, writer of "On the Self-Regulation of Behaviour", states that a consumer behaves consciously only 5% of times. Findings of recent years illustrate that part of consumers acquire goods and services based on the emotions evoked by the used communication means. Opposing this theory, traditional approaches to market communication considered, instead, the rationality of consumers' behaviours.

Making this first chapter clearer and more schematic, neuromarketing is defined as a sub-area of neuroeconomics, while neuroeconomics is a sub area of neuroscience. The second one (neuroeconomics) is focused on the identification [Zak, 2004] of the neural areas associated with the economic decision-making process. We have understood that neuromarketing's task is to help marketers examine buyers' actions and, in the meantime, bypass the problem of

their conscious and controlled responses. This is done through neuroscientific tools which can be both combined in the research and not.

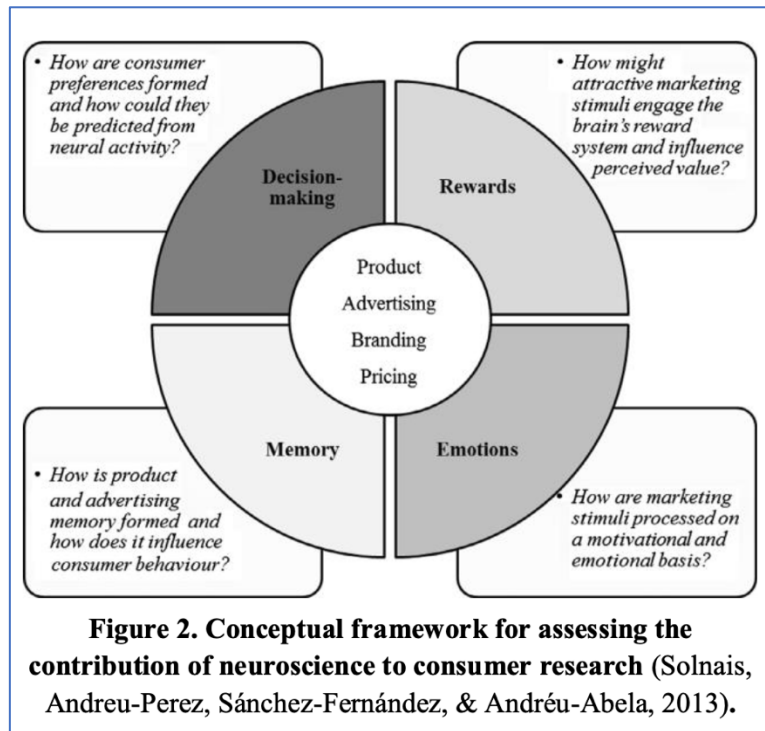


Figure 1 Four categories by Solnais et al. (2013)

As for any research, even for the one we are dealing with, empirical evidence is needed. The image on the left side represents four categories based on empirical collection, done by Solnais et al. (2013), of marketing stimuli.

This framework applies for consumers' neuroscience, and it is

questionable whether it does so or not for neuromarketing. Still, evidence suggests a resemblance between them for categories “Rewards” and “Emotions”. An example for the latter is that emotions influence the decision behaviour of people, as a study made by Bechara and Damasio (2005) suggests. Consumers, in fact, are not completely rational -homo economicus-, a pure modern economic theoretical view; they are shaped by emotions and the unconscious [Kenning and Linzmajer, 2010].

The first category is linked to consumers decision-making process, the formation of their preferences and how the latter can be predicted using neuroimaging techniques. The second category focuses on the attractiveness of the marketing stimuli and at what extent it influences the consumer in the value-consideration of the good or service at stake. The “memory” category highlights the emotional responses to marketing stimuli. The last section relates to the detection of how the memory and

attention of consumers are founded, based on the stimulus, and how their behaviour is shaped.

Now, having clear what neuromarketing is, it is important to state the techniques it uses to operate. This will be done in the following chapter.

CHAPTER TWO

As previously mentioned, neuromarketing employs a set of techniques which allow the investigation of the brain and the human psyche at the advantage of the economic realm. The objective is to know how to organise the marketing of some goods and services based on reactions caused in the consumer.

The techniques that will be described in this chapter are based on the exhibition of publicity campaigns to subjects during the analysis.

One of the most widespread instruments is electroencephalography (EEG), firstly used in 1920 by Hans Berger, a German psychiatrist and its inventor. The EEG was the earliest tool through which researchers understood the internal functioning of the brain: it records the electrical signals, in just a few milliseconds, generated by our brain so as to capture brainwaves' activity and to measure the neurological responsiveness to marketing stimuli, as pointed out by A.K. Pradeep in "The Buying Brain: Secrets for Selling to the Subconscious Mind". The result is the answering to questions concerning consumers' attention, the impact of advertising and the way in which emotions influence the purchase decision-making process.

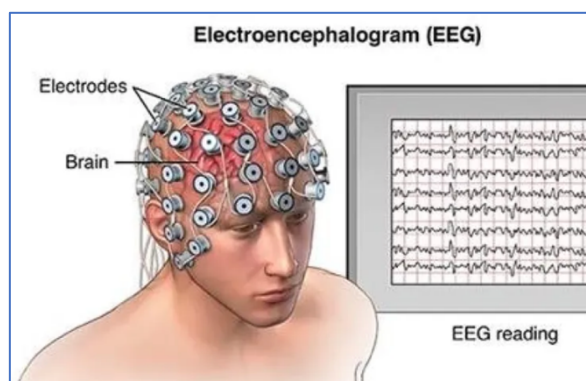


Figure 2 EEG

The image on the left shows how the EEG is carried out. From it, we can appreciate that the EEG is a non-invasive practice which, as a weak point, does not detect any information from the sub-cortex area, a deeper brain area. Its unintrusiveness is due to the

collection of data through electrodes. The more the latter are, the better. In addition, the EEG does not guarantee similarity in results: they can vary from one individual to another based on the different conductivity of the used materials in relation to electrical signals. Moreover, it is important to state that this practice is subject to artifacts. To understand what they are and why they could damage the study, it shall be useful to make an example. Let us imagine a person who is under study. If, while performing the research, a sensor detects a muscle contraction of the blinking action, an artifact will be produced, corrupting the whole work. Many researchers have agreed upon a solution to this problem: pairing the electroencephalography with other instruments to achieve accuracy in the human's responsiveness analysis to marketing stimuli.

The second expensive, non-invasive and not at everyone's hand method to perform the study is based on the use of the functional Magnetic Resonance Imaging (fMRI), shown in figure 3, which measures the increase of the oxygen level in the brain's blood flow, without using radiation, thanks to magnets inserted in a tube. Far from the EEG, which immediately detects the response, the fMRI has a 5 second delay due to the time the blood needs to get to the area activated by the



Figure 3 University of York fMRI

stimulus. Zurawicki, in "Neuromarketing: Exploring the brain of the consumer" (2010), explains the functioning of the functional Magnetic Resonance Imaging. Firstly, it is crucial to mention that blood

contains iron. Secondly, we should point out that when vasodilatation occurs the blood accumulates in the activated area and, entering the activated cells, the amount of oxygen decreases. The magnets detect both

the presence of iron and, consequently, the active cortical regions (see figure 4). The fMRI was used to test subjects while they savoured a variety of wines. People believed these wines were different because they were sold at different prices. The result highlighted that the higher is the price, the better was the flavour, as reported by the consumers.

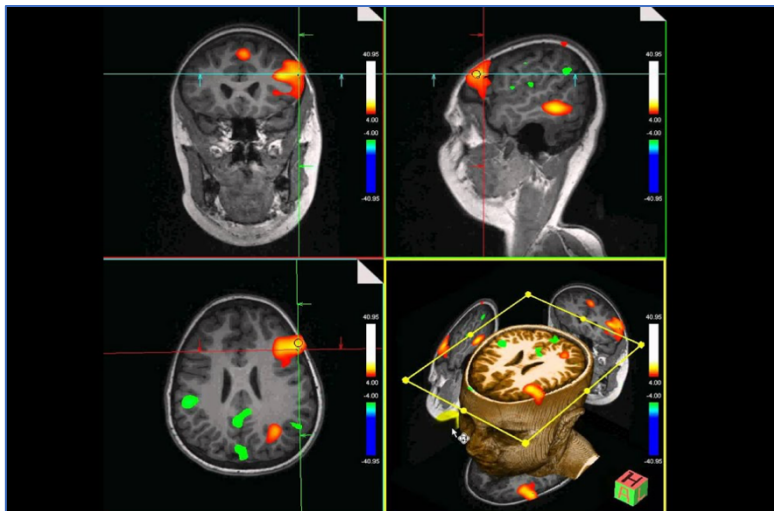


Figure 4 fMRI by Children's Healthcare of Atlanta, 2011

Among others, the MagnetoEncephaloGraphy (MEG) is very similar to the EEG. This technique has a better spatial resolution and measures the magnetic field generated by the electrical activity of the neurons subordinated to the marketing stimulus.

One of the most invasive techniques is the Transcranial Magnetic Stimulation (TMS) (see figure 5). This is due to the application of short electromagnetic impulses at the scalp level. Du Plessis defines this



Figure 5 The Transcranial Magnetic Stimulation (TMS)-The Boston Globe 2016

practice as to be sometimes unpleasant and inappropriate.

Currently, the least used technology is the PET (Positron Emission Tomography), consisting of an injection of a

radioactive substance in the individual. Its flow is analysed in order to detect a significant increase subject to the activation of a certain area. The substance, fluorodeoxyglucose, is absorbed by the cells which will end up having a rising activity in the need for energy to compensate their consumption.

Du Plessis referred to the above-mentioned tools as not always so reliable. He affirmed that another method could be the eye-measurement through eye-tracking: Jesensky writes, in the “Research Methods of Neuromarketing at the Place of Sale”, that people perceive the 83% of information through their eyes. The ocular movements reveal where the attention of the person is, the way in which text is read, the time spent and the pupil dilatation. A longer blinking interval and a dilatated pupil suggest that the person is processing in a good and profitable way the information. This method is usually combined with the EEG one.

Lastly, the Implicit Name Associations’ test, even without being a neuroscientific tool, measures the consumer’s response when hearing the name of a brand. This practice is both useful and not: let us consider that, because the human brain has an interconnected storing of information, a positive association can derive from a positive personal emotion. In these terms, it is rather difficult to have a decontextualised result.

Neuroimaging Tools	Spatial Resolution	Temporal Resolution
fMRI	High/good	Low/limited
EEG	Low/limited	High/good
MEG	High/good	High/good
PET	High/good	Low/poor
TMS	High/good	High/good

Figure 6 Schematic overview neuroimaging tools-Kevin van Schaik, 2014

Figure 6 summarises the main neuroimaging tools that have been dealt so far in this thesis and gives a general picture of this technical chapter.

CHAPTER THREE

Ethics is the branch of philosophy dealing with moral principles. It studies what is morally right or wrong, so to say what is worth doing to enhance the life of those who perform that certain activity. What is just or unjust. An individual is moral if he/she tells the truth and does not lie. This person will be honest, truthful, trustworthy, and reliable.

Since the beginning of the use of neuromarketing, there has been a charismatic discussion both in neuroscientific circles and marketing ones over its research methods, the financial demands it requires, the need for a professional staff, the difficult interpretation of results and the reliability and accuracy of data. On the contrary, supporters of the new phenomenon praise its uniqueness: It allows the creation of irresistible marketing campaigns and strategies.

The opposers highlight one main problem: the rejection of ethics by neuromarketing advocates. Neuromarketers invade people's privacy, they handle and influence them without respecting their free will. In "Neuromarketing: The Hope and Hype of Neuroimaging in Business. Nature Reviews Neuroscience", Ariely and Berns point out the worries about ethical standards in neuromarketing: 1) apprehension towards the privacy of consumers; 2) abuse of information obtained in the neuro research and search for the weakness of the consumer; 3) generalization of results; 4) the use of the neuromarketing research at the disadvantage of the consumer.

Firstly, researchers think that reading the mind of consumers goes against their privacy and allows neuromarketers to get information without buyers knowing it. From the side of neuromarketers, the problem is here bypassed through the employment of transparency of research: people must know why they are participating in the research, which are its objectives, tools used, side effects, positive outcomes, and general consequences. They must consent to the use of the obtained data for

specific purposes. There are cases in which these guidelines are not followed as happened with the Mexican incident: citizens' responses to a party advertisement were recorded without their knowledge. Another example refers to a practice usually performed by some companies: women are drawn to buy sexy clothing, cars and diamonds in specific moments of their menstrual cycles because marketers show these items-related ads to tempt them buy the products.

Secondly, the misuse of information acquired by neuromarketers is a crucial point of debate: they tend to look for people's fragilities going at their advantage. Over the last years, this one has been a major area of discussion: neuromarketing experts have exploited the growing obsession of the general public for body image matters, developed in these decades, and contributed to the diffusion of the eating disorder phenomenon all over the world. They make use of the idealization of thinness, which is spread through social media via both naturally thin models and



Figure 7 Life and Style Magazine, 2012

unnatural ones, to sell products, told to transform the natural figure of a person into the "ideal" one. Figure 7 shows a clear example: on the cover of the "Life and Style" magazine, the following sentence is written "Jessica loses 40 LBS [18 Kg] in four months. [...] Her secret trick to melt the pounds". The company selling this product, defined as the perfect one to lose weight, exploits the ideal of thinness to trade the very same product. Those people who are fragile will be influenced by what is reported in the magazine and try to

adhere to it. By doing so, many develop eating disorder behaviours. They eat in a way which damages their health and compare them to others.

Thirdly, Ariely and Berns identify the generalization of results, obtained from a small research sample, as a problem related to ethics. This idea can be associated with the “buy button” one, forcing the consumer to buy a certain good or service and, as many suppose, rendering consumers unable to control their own choices. Opposers of neuromarketing suggest that the priorly-mentioned purchase mechanism cannot exist because the discovery carried out in one subject cannot be generalised to the multitude: “cognitive processes associated with the purchase decision are multifactorial, and therefore it is not possible to limit them to one particular area”, Margareta Nadanyiova writes in “Neuromarketing-An Opportunity or a Threat?”. Steven Stanton, one of the co-writers of a paper on the “Journal of Business Ethics”, says that most consumers do not have their brains inspected. Neuromarketers assume to know the thoughts of clients based on what the former manages to extrapolate from the small number of tested people.

Lastly, neuromarketing research is thought by many as a disadvantage for the consumer. Companies make consumers buy products they do not want. On the opposite, supporters think that, because individuals possess the free will, it is not possible to bypass the latter. Purchasers own their decisions and neuromarketers know that. It can be said that neuromarketing is, in this sense, a science aiming at revealing the inner functioning of the human mind, and its secrets, the preferences of buyers and the reason why they buy certain things over others.

Certainly, there are certain areas where it would be better to prohibit this type of research such as in the advertising of alcoholic beverages, tobacco, unhealthy food and behaviours, religious and political ideologies, etc...

“Will neuroscience ever be a threat to our free will?” Walter Sinnott-Armstrong, Professor of Practical Ethics and Philosopher, believes that the fear around neuromarketing is based on the exaggeration that has

been made around its capabilities compared to other forms of marketing. It needs to be said that every form of marketing is about *guiding and shaping* people in their purchase-choices. The difference is that with neuromarketing people fear to be *forced* to make certain decisions, not just being persuaded (as in happens with pure marketing).

Overall, it is difficult to arrest the misuse that sometimes is being done related to the discoveries made. Neuromarketing is able both to understand and help and to manipulate human thinking. There is a subtle line between them, but it needs not to be crossed.

Under the umbrella of ethics, privacy has a major position.

Privacy is the right to be free from the intrusion of unwanted people in the individual's life and matters. It concerns the importance of keeping personal occurrences far from spying eyes.

After this brief definition of privacy, it is understandable why many have blamed neuromarketing as an invasion within the personal sphere and as an objection to privacy. Let us consider the use of the fMRI to collect data about the brain. Functional MRI is contextualised to the experiment at stake. Structural MRI creates a map of the brain without measuring cerebral function: it gathers information regarding the health of the subject. This process leads to the detection of HIV status, mental illness, cancer, mental diseases, tumours, malformations of the brain, etc... This is an extremely powerful tool in the hands of neuroscientists and neuromarketers due to the potential misuse data could be exposed to. Both structural and functional MRI are acquired at the same time, consequently companies have access to both. When the informed consent is not present, such evidence can be used in potentially harmful ways participants do not know.

If an examined person has cancer, neuromarketers could use this information to make that individual receive advertisements publicising miraculous medicines or treatments which, in reality, do not have nothing to do with the cure of that tumour. This could increase their sale.

The above-mentioned situation may occur when the fragility of people is exploited at the advantage of firms for profit. Hardships are used in order to force people, even if the latter do not understand it, to acquire certain goods and services, making them think this is the best possible option for their circumstance. This action can be performed even without the use of brain scanning. Once neuromarketers, at least some of them, know which are the personal tribulations people, or a part of them, are facing, they have the key to do what they know best, so to say influence and oblige.

With the passing of time, especially over the last decades, (neuro) marketing activities have increased the number of people having harmful behaviours leading to the development of one of the most debated issues, so to say the one of eating disorders.

CHAPTER FOUR

The Belmont Report is one of the most important documents dealing with the ethical principles for the protection of human subjects of research. It was written by the National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research on April 18, 1979. The National Commission was created in 1974 with the task of identifying the main ethical principles guiding the “conduct of biomedical and behavioural research involving human subjects and to develop guidelines which should be followed to assure that such research is conducted in accordance with those principles” [Belmont Report]. The Report summarizes the principles decided by the Commission both during the ethical deliberations in its four-day discussion, held at Smithsonian Institution’s Belmont Conference Center, and during a four-years period. The drafting of the Report was carried out thanks to the help of specialists and professionals dealing with their area of expertise. It was asked to adopt the document in its entirety. The latter was published in the Federal Register and reprints were provided upon request to scientists, Federal employees, and members of the Institutional Review Boards. It had to take into account the boundaries between biomedical and behavioural research; the “assessment of risk-benefit criteria in the determination of the appropriateness of research involving human subjects” [Belmont Report]; the precision of the guidelines for the selection of subjects and the basics and structure of the informed consent.

The members of the commission, at that specific time, were Kenneth John Ryan, Joseph V. Brady, Robert E. Cooke, Dorothy I. Height, Albert R. Jonsen, Patricia King, Karen Lebacqz, Donald W. Seldin, Eliot Stellar, David W. Louisell and Robert H. Turtle. The last three commissioners were deceased.

The codes within the Belmont Document report the three basic principles of ethics: respect for persons, beneficence, and justice.

The first proposition contains two ethical declarations: individuals are autonomous, and self-determination must be respected; people with diminished autonomy need to be protected. Firstly, subjects' opinions must be considered, and researchers cannot obstruct their actions; they (people) must receive all the information necessary to make a fully minded judgement. Secondly, there are beings who do not have the ability of self-decision due to "illness, mental disability, or circumstances that severely restrict liberty. Respect [...] may require protecting them as they mature or while they are incapacitated" [Belmont]. In certain cases, these fragile people can be even excluded from research. This depends mostly on the risk-benefit analysis, so to say the consideration of the degrees of harm and welfare. Even if usually considered as obvious, individuals must decide to enter the research on a voluntary basis. This is not always easily applicable as for prisoners. On the one hand, the latter's involvement in research is important to show that they are not deprived from this right despite their condition. On the other, under the condition of detention, detainees could be coerced or influenced to engage in research activities for which they would not volunteer if reality was different. Should be prisoners allowed to volunteer for research or not? This is still a dilemma.

The second principle is beneficence based on the respect of people's decisions and the protection of their wellbeing. The two rules are: "do not harm and maximize possible benefits and minimize possible harms" [Belmont Report]. It is reasonable to assume that, in order to discover what betters people, some of them need to be damaged, therefore researchers have to assess when it is required to expose people to risk. This is an especially delicate topics for what concerns children: their involvement into research activities is justified when young subjects are beneficial in discovering new and effective ways of "treating childhood diseases and fostering the development" [Belmont Report].

The third principle is justice, a well relevant one in the search for subjects of research. “The selection of research subjects needs to be scrutinized in order to determine whether some classes (e.g., welfare patients, particular racial and ethnic minorities, or persons confined to institutions) are being systematically selected simply because of their easy availability, their compromised position [...] rather than for reasons directly related to the problem being studied” [Belmont Report]. It is important that scientists do not involve people who will not be neither present nor future beneficiaries.

To respect subjects means that they must be given the possibility to understand, and possibly choose, what can or cannot happen to them following the research. This is done through the informed consent whose aim is to inform and make facts comprehensible. It usually contains the research procedure, its purposes, the statement of voluntary participation free from coercion, risks (harm) and potential benefits (positive value), alternative procedures and the procedure to both ask questions and withdraw at any time.

Lastly, for what concerns the selection process of subjects, justice is relevant: it is essential both not to choose undesirable people for riskier research and not to “offer potentially beneficial research only to some patients who are in favor” [Belmont Report]. Moreover, selection must take into account and involve those categories which can bear the burden the best: for instance, following this assumption, adults will be chosen before children and prisoners, or infirm people will be inserted in the research either only under certain conditions or at all. The inclusion of vulnerable subjects, whether materially, physically, or spiritually, must be avoided.

From the analysis of this document, it is possible to grasp the reason why, as stated in the previous chapter, (neuro-) marketing is invading people’s privacy and security, encouraging them to undertake an extremely risky path, for instance, the one of eating disorders.

CHAPTER FIVE

“Although the term “eating” is in the name, eating disorders are about more than food” [Healthline, “Six Common Types of Eating Disorders”]: the sentence which starts in the best possible way our journey into eating disorders’ knowledge. They are, in fact, a mental disorder which requires, at least in most of the cases, a medical intervention from psychological experts so as to stop the advance of this life-threatening condition, which is among the deadliest mental illnesses after opioid overdose. They tend to start with obsessions towards food, showed in different ways, body weight, or body shape and develop in food-restriction, food binges, purging behaviours and/or overexercising. EDs concern an estimation of 28 million people in America and 3 million People in Italy with, in the Italian country, 8500 new cases each year; the incidence among children is also growing and the most affected gender is the female one, with an increase in the number of affected males and gender variants. The “American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders” describes the existing types of EDs (eating disorders) along with their symptoms.

Eating disorders usually show themselves with specific signs: dramatic weight loss; preoccupation with weight, food and related calories; restrictive dieting; cold intolerance, abdominal pain, either excess or lack of energy; avoidance of meals through excuses, intense and systematic fear of weight gain, refusal of ingestion of certain foods, constant weighting and body-checking; binge eating; excess of exercise; amenorrhea (absence of the menstrual cycle); atypical lab test results; fainting, poor immune system and wound healing; calluses across the finger joints (in those individuals who induce their vomiting).

They (EDs) tend to show in people who are perfectionist, impulsive or neurotics, as a 2015 Research of the US National Institutes of Health

highlights. Moreover, the existing pressure on thinness, cultural preferences, and social media's promotion of these ideals have a role.

A brief description of the main types of EDs will be done.

Anorexia nervosa is the most known ED and concerns people, mainly women, who view themselves as overweight, even if they are underweight and, therefore, in a dangerous health condition. They monitor their weight, what they eat and restrict. This concept has evolved over time, in fact, many people suffering from anorexia are not underweight still they have an ED. Therefore, we can assume that mass is not the only variable to consider. Anorexia nervosa includes people who have food-related criticalities but, at the same time, can also have a normal body fat index. Certainly, this behaviour can potentially lead to extremely low weight if performed over time.

People who suffer from bulimia nervosa eat large amounts of food in specific periods of time, without having any control on their actions. After this meal, they purge through heavy restriction or vomiting so as to compensate for the number of ingested calories.

Binge eaters, instead, follow the same initial pattern of the previous disorder but do not neither have purging behaviours nor perform calorie restriction.

For the sake of this research, despite the existence of other types of eating disorders, we are focusing on anorexia/anorexia nervosa and bulimia nervosa.

Much research has been conducted on the relation between eating disorders and social media marketing: studies suggest that spending too much time on social media, namely Facebook, Instagram and YouTube can increase the risk of EDs. This is because especially young people have the weight of media pressure on their shoulders and looking at social media campaigns, they try to stick to the spread ideal of beauty so as to feel as part of the society they are living in. "Advertisements emphasize thinness as standard for female beauty, and the bodies idealized in the media are frequently atypical of normal, healthy women: [...] today's fashion models weigh 23% less than the average female" and

influence the idea of “the perfect body” society has. [HealthyPlace, “Eating Disorders: Body Image and Advertising”] Therefore, (neuro-) marketers exploit this dissatisfaction with one’s own body and insecurity to make people buy certain products, goods and services aimed at attaining that unhealthy body-related paragon. Because they make use of this situation to increase their profit, it is not at their interest to act at the advantage of people.

The way in which young individuals are usually approached is very particular and happens through social media: an experiment made by Revealing Reality on Instagram tells us that if an account managed by a 17 years old girl likes a post about dieting, subsequent accounts with related content are suggested, increasing the probability of developing obsession and illness-related behaviours.

“Social media may have only a little influence on some people. Thus, it is important to identify the most susceptible people who can be easily influenced by social media content specifically promoting the use of highly processed foods and unrealistic exercise regimens for weight loss and body shape maintenance” [Eating Disorders and Social Media, News Media Life Sciences]. Nevertheless, the problem is that there should not be any promotion of harmful behaviours and people should speak out and state that in many cases, EDs are a consequence of marketing promotions. Companies should not exploit the weakness of some people and damage their life because of earnings. They should, instead, compete in a market in which the overall wellbeing of the consumer, as an individual, prevails over any possible material gain.

CONCLUSIONS

Neuromarketing is a complex and debated area by many. It has its positive and negative sides even if the latter seem to outweigh the former.

Neuromarketers are able to access the most internal part of the individual, namely the brain, study it and take advantage of the analysis. This is useful to understand, partly, how the brain functions and how it responds to external stimuli.

Meanwhile, they are also able to use the neuro-tool to improve the perception and impact a product has on the consumer through the knowledge they acquire of the human brain and of the areas which are activated when interacting with the world. Sadly, this practice, as seen, can generate some harmful effects which can take life away from some people, both figuratively and otherwise, for the sake of profit.

Emotions play a crucial role in this dissertation because they guide a good part of our decisions without giving the decision-maker the full understanding of how they operate. Following this belief, emotions generated by what we see on commercials, guide our behaviours, and lead us on very dangerous paths. In this case, the utility, and the reason of the birth of the Belmont Report lie: what is right to do? Is it right to use people at the advantage of economy? Is it right to condemn some of them to a life of difficulties, uncertainty, misery and, at worst, death? Where are respect for people, beneficence, justice placed?

This dissertation leads to a both simple and crucial conclusion: "Advertisers need to recognize the possibility that thin models do more than simply influence sales. It is normal for women to compare themselves to thin models, since women place a higher priority on personal weight than men. Advertising provides social cues in the construction of individual's self. These social cues are very important not because they determine exactly what the audience perceives itself to be, but because social cues influence which attribute groups will be most

important in that individual's self model" [Psychology, Marketing and Eating Disorders: Integrating the Evidence From the Literature].

At the same time, the responsibility is not to be given to marketers only. Their advertisements influence society, but the reverse also holds true, and it is necessary for people to undertake a social responsibility process: those who are cleverer should help those individuals who are not able to interpret in a correct and healthy manner the advertisement at stake, who are more fragile and cannot be rational towards certain topics. More caution is needed on both sides because, holding true the assumption that (neuro-) marketers create advertisements, why do the latter have so much power on the society? They have it because it (the society) is characterised by a constant focus on appearance and on fitting in determined standards.

Notwithstanding, new ways of attracting audiences are needed for both individual health and marketers: firstly, there would be less people suffering from eating disorders and secondly, much less criticism would be done towards marketers who are constantly questioned.

Lastly, always remember society's standards are nothing compared to personal tranquillity and uniqueness.

"If we are ready to tear down the walls that confine us, break the cage that imprisons us, we will discover what our wings are for."

- Michael Meegan

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SUMMARY

Il campo dell'Intelligenza Artificiale nacque nel 1956 durante un *workshop* organizzato da John McCarthy, informatico e scienziato cognitivo americano. L'intelligenza artificiale (IA) è definita come l'intelligenza creata dall'uomo per le macchine, che si oppone a quella degli animali e degli esseri umani: è la simulazione dei processi intellettuali umani da parte dei sistemi informatici. Molte delle basi dell'intelligenza artificiale provengono dall'ingegno di Alan Turing, matematico e informatico inglese, che descrisse, nel suo "*Computing Machinery and Intelligence*", la possibilità di replicare la simulazione dell'intelligenza degli individui. Inoltre, Turing fece riferimento all'eventualità che le macchine potessero apprendere autonomamente. Le aree principali in cui opera l'IA sono il ragionamento, la rappresentazione della conoscenza, l'apprendimento, la pianificazione, la percezione e la manipolazione della realtà circostante.

Con il passare del tempo, l'intelligenza artificiale si è sviluppata sia a vantaggio che a svantaggio delle persone, come dimostra questa tesi. Si è permesso alle macchine di entrare nella parte più intima dell'essere umano, il cervello, il cui funzionamento è ancora, in massima parte, un mistero. Questo (il cervello) viene indagato non solo per scopi sanitari, ma anche economici. Questa intrusione ha un doppio aspetto: da un lato è positiva, infatti, grazie alle nuove scoperte, molte malattie neurologiche sono curabili o oggetto di ricerca medica per futuri miglioramenti; dall'altro, come un detto comune esplicita, "ogni eccesso è un difetto". Questa espressione testimonia che entrare in ambiti che non dovrebbero essere dominati dagli uomini non ha sempre un buon esito. Un chiaro caso viene discusso in questa tesi: gli effetti collaterali sulla salute.

Come accennato in precedenza, l'attività interiore umana viene analizzata anche per motivi economici. "Fare impresa" significa, infatti, avere un'attività commerciale, che si traduce in profitto, guadagno economico. Attraverso il denaro, le persone soddisfano le loro preferenze;

più capacità di acquisto hanno, maggiore è il numero di desideri che possono soddisfare.

È necessario considerare il contesto di mercato in cui viviamo oggi, caratterizzato dalla competitività tra aziende che vendono beni e servizi simili. Un'azienda deve distinguersi dalle altre in base alla qualità, al prezzo, alla sostenibilità, ecc. Per renderlo possibile è necessario ottenere visibilità tramite il *marketing*, cioè l'attività di promozione, ricerca e pubblicità.

Il *neuromarketing* è un campo di studio emergente basato su neuroscienze, *marketing* e psicologia. Si avvale dell'economia comportamentale, che studia gli effetti emotivi, cognitivi, sociali e psicologici aventi influenza sulle decisioni degli individui. Lo scopo del *neuromarketing* è la comprensione delle preferenze e delle scelte dei consumatori attraverso lo studio dei loro stessi comportamenti. Questa indagine viene eseguita a vantaggio del fornitore per aumentare il suo profitto.

I metodi neuroscientifici specifici maggiormente utilizzati sono l'elettroencefalografia (EEG), la stimolazione magnetica transcranica (TMS), la magnetoencefalografia (MEG), la risonanza magnetica funzionale (fMRI) e la tomografia ad emissione di positroni (PET). Inoltre, vengono impiegate tecniche come *l'eye-tracking* e la valutazione della frequenza cardiaca.

Questa tesi analizza la natura e le caratteristiche del *neuromarketing*, il motivo per cui fu inventato e utilizzato e le conseguenze che ha sui consumatori. Viene sottolineato l'effetto che le campagne pubblicitarie hanno sul grande pubblico e sulla sua salute, con un *focus* sui disturbi alimentari (DCA).

Il *neuromarketing* viene spesso definito come un “campo interdisciplinare, situato al confine tra neuroscienze, psicologia e marketing; si concentra sulla valutazione delle risposte cognitive ed emotive dei consumatori a vari stimoli di marketing” [Karmarkar, 2021]. La sua caratteristica poliedrica è dovuta a una combinazione di neuroanatomia, che spiega la struttura anatomica del cervello;

neuropsicologia, che si occupa del rapporto tra le funzioni del sistema nervoso e il comportamento umano; neuroendocrinologia, che esplora i legami tra gli ormoni e il suddetto sistema; neurologia, che studia il sistema e le sue possibili malattie; neuroscienze cognitive, incentrate sui neuro processi e sulla mente umana; e, infine, neuroeconomia e neurofinanza, riguardanti il processo decisionale dei soggetti economici in relazione all'impatto dei fattori sociali, emotivi e cognitivi.

In *“Introduction to Neuromarketing and Consumer Neuroscience”*, Ramsøy vede questo fenomeno (*neuromarketing*) come uno sfruttamento commerciale della conoscenza neuroscientifica.

La parola *“neuromarketing”* è composta da *“neuro”* e *“marketing”*. Quest'ultimo significa “[...] lo svolgimento di attività imprenditoriali che indirizzano il flusso di beni, e servizi dai produttori ai consumatori” [American Marketing Association]: è un processo volto ad attrarre l'interesse del consumatore su un prodotto in un mercato sempre più competitivo.

Quanto discusso fino ad ora, si basa sull'economia comportamentale: i *“marketers”* creano una realtà che spinge le persone verso l'acquisizione dei loro beni, evitando il *“problema”* del libero arbitrio dei consumatori nel loro processo decisionale. Il suddetto campo di studio si concentra sull'interiorità degli esseri umani, accedendo ai pensieri e sentimenti inconsci che innescano le loro scelte di acquisto.

Si hanno diversi tipi di scelte che l'individuo può prendere.

Il primo si riferisce a quelle decisioni che vengono fatte sulla base di informazioni complete sul tema di interesse, costi e benefici (sia presenti che futuri), vincoli di budget, alternative e preferenze personali; che sono il risultato di un processo decisionale consapevole e razionale.

Il secondo (inconscio) è caratterizzato da quelle decisioni basate sull'esperienza e sulla routine, prive di caratteristiche valutative. Ci sono casi in cui le decisioni sono il risultato di determinati comportamenti di *marketing* che sfruttano i sentimenti umani: il processo decisionale emotivo è quello guidato dalle emozioni e solitamente modellato dal (neuro) *marketing*. Il marketing emotivo viene impiegato per

coinvolgere le emozioni dei consumatori e formare una connessione marchio-acquirente più profonda.

A questo punto, quindi, l'attenzione deve essere rivolta esclusivamente all'emozione umana: "reazione mentale cosciente [...] verso un oggetto specifico e tipicamente accompagnata da cambiamenti psicologici e comportamentali" [Dizionario Merriam-Webster]. Le emozioni guidano le nostre decisioni e hanno una forte influenza su di esse: solitamente, maggiore è l'impegno emotivo, ovvero, maggiore è lo stimolo del *marketing*, più le persone sono attratte verso ciò che lo sta causando con maggiore probabilità che il consumatore sia incline ad acquisire il bene. Di conseguenza, è anche possibile prevedere e indirizzare le decisioni di acquisto: una campagna il cui *marketing* sfrutta e guida le emozioni delle persone avrà più successo di un'altra.

Il rapporto tra emozioni e strumenti di *neuromarketing* genera, in molti casi, il successo di un settore.

Attenzione deve essere data all'etica: la branca della filosofia che si occupa dei principi morali. Essa studia ciò che è moralmente giusto o sbagliato, per così dire, cosa vale la pena fare per migliorare la vita di chi svolge una determinata attività.

Il *neuromarketing* ha innescato una vigorosa discussione sia negli ambienti neuroscientifici che in quelli commerciali, nei suoi metodi di ricerca, nelle esigenze finanziarie che richiede, nella necessità di uno *staff* professionale, nella difficile interpretazione dei risultati e nell'affidabilità e l'accuratezza dei dati. Al contrario, i sostenitori del nuovo fenomeno lodano la sua unicità: consente la creazione di campagne e strategie di *marketing* irresistibili ed incomparabili.

Gli oppositori evidenziano principalmente un problema: la mancanza dell'etica nello svolgimento delle pratiche legate al *neuromarketing*, invadendo la privacy delle persone, manipolandole e influenzandole senza rispettarne il libero arbitrio. In "*Neuromarketing: la speranza e l'hype del neuroimaging negli affari. Nature Reviews Neuroscience*", Ariely e Berns sottolineano le preoccupazioni circa gli *standards* etici nel *neuromarketing*: 1) apprensione verso la privacy dei consumatori; 2)

abuso di informazioni ottenute nella neuro-ricerca e ricerca della debolezza del consumatore; 3) generalizzazione dei risultati; 4) l'utilizzo del *neuromarketing* a svantaggio del consumatore.

In primo luogo, i ricercatori pensano che leggere la mente dei consumatori vada contro la loro privacy e consenta ai *neuromarketers* di ottenere informazioni senza che gli acquirenti lo sappiano.

In secondo luogo, l'uso improprio delle informazioni acquisite dai *neuromarketers* è un punto cruciale del dibattito: essi tendono a cercare le fragilità delle persone che vadano a loro (dei *neuromarketers*) vantaggio. Negli ultimi anni, questo è stato un grande argomento di discussione: gli esperti di *neuromarketing* hanno sfruttato la crescente ossessione del grande pubblico per le questioni di “immagine corporea”, sviluppatasi in questi decenni, e hanno contribuito alla diffusione del fenomeno dei disturbi alimentari in tutto il mondo. Fanno uso dell'idealizzazione della magrezza, che si diffonde attraverso i *social media* sia tramite modelli naturalmente magri sia tramite quelli innaturali, e finalizzata ad un incremento delle vendite.

In terzo luogo, Ariely e Berns identificano la generalizzazione dei risultati, ottenuti da un piccolo campione di ricerca, come un problema legato all'etica. Gli oppositori del *neuromarketing* suggeriscono che il meccanismo di acquisizione prima citato non può sussistere, perché la scoperta operata in un soggetto non è generalizzabile alla moltitudine: “i processi cognitivi associati alla decisione di acquisto sono multifattoriali, e quindi non è possibile limitarli a una sola area”, scrive Margareta Nadanyiova in “*Neuromarketing: un'opportunità o una minaccia?*”.

Infine, la ricerca di *neuromarketing* è ritenuta da molti uno svantaggio per il consumatore. Le aziende costringono i consumatori ad acquistare prodotti che non desiderano. Gli individui temono di essere costretti a prendere determinate decisioni e non solo di essere persuasi (come accade con il *marketing* puro). Al contrario, i sostenitori pensano che, poiché gli individui possiedono il libero arbitrio, non sia possibile aggirare quest'ultimo.

Il Rapporto Belmont è uno dei documenti più importanti in ambito etico per la protezione dei soggetti di ricerca. È stato scritto dalla Commissione Nazionale per la Protezione dei Soggetti Umani della Ricerca Biomedica e Comportamentale il 18 aprile 1979. I codici all'interno del Documento Belmont riportano i tre principi fondamentali dell'etica: il rispetto delle persone, la beneficenza e la giustizia.

Gli individui sono autonomi nelle loro decisioni e l'autodeterminazione deve essere rispettata; le persone con ridotta autonomia devono essere protette.

Il secondo principio è la beneficenza, basata sul rispetto delle decisioni delle persone e sulla tutela del loro benessere. Le due regole sono: “non nuocere, massimizzare i possibili benefici e minimizzare i possibili danni” [Rapporto Belmont]. È ragionevole supporre che, per scoprire cosa beneficia le persone, alcune di esse debbano essere danneggiate; quindi, i ricercatori devono valutare quando è necessario esporre i soggetti al rischio. Questo è un argomento particolarmente delicato, soprattutto in relazione a soggetti di studio in età precoce: il loro coinvolgimento in attività di ricerca è giustificato quando essi sono utili per scoprire nuovi ed efficaci modi di “curare le malattie infantili e favorire lo sviluppo” [Rapporto Belmont].

Il terzo principio è la giustizia, molto rilevante nella ricerca. “La selezione dei soggetti deve essere esaminata al fine di determinare se alcune classi (ad esempio, pazienti assistenziali, particolari minoranze razziali ed etniche o persone confinate in istituti psichiatrici) vengono sistematicamente selezionate semplicemente a causa della loro facile disponibilità, della loro posizione compromessa [...] piuttosto che per ragioni direttamente connesse al problema oggetto di studio” [Rapporto Belmont]. È importante che gli scienziati non coinvolgano individui che non saranno né presenti né futuri beneficiari.

Rispettare i soggetti significa dare loro la possibilità di capire, ed eventualmente scegliere, cosa può o non può loro accadere a seguito della ricerca. Ciò avviene attraverso il consenso informato, il cui scopo è quello di informare e rendere comprensibili i fatti. Solitamente contiene la

procedura di ricerca, le sue finalità, la dichiarazione di partecipazione volontaria e libera da coercizione, rischi e potenziali benefici, procedure alternative e la procedura per porre domande e ritirarsi in qualsiasi momento.

Dall'analisi di questo documento è possibile cogliere il motivo per cui, il (neuro-)marketing sta invadendo la privacy e la sicurezza delle persone, spingendole a intraprendere un percorso estremamente rischioso, ad esempio quello dei disturbi alimentari, *focus* della presente tesi.

Questi ultimi sono malattie mentali che richiedono, almeno nella maggior parte dei casi, un intervento medico da parte di esperti psicologi per fermare l'avanzata di una condizione pericolosa per la vita e tra le malattie mentali più letali dopo *l'overdose* da oppiacei. Tendono a iniziare con ossessioni verso il cibo, mostrate in modi diversi, il peso corporeo o la forma del corpo e si sviluppano attraverso restrizione alimentare, abbuffate alimentari, comportamenti di eliminazione e/o esercizio eccessivo. I DCA (Disturbi del Comportamento Alimentare) riguardano una stima di 28 milioni di persone in America e 3 milioni di persone in Italia con 8500 nuovi casi ogni anno; cresce anche l'incidenza tra i bambini e il genere più colpito è quello femminile, con un aumento del numero di uomini e *transgenders* colpiti.

Sono state condotte molte ricerche sulla relazione tra disturbi alimentari e *social media marketing*: gli studi suggeriscono che passare troppo tempo sui *social media*, in particolare Facebook, Instagram e YouTube, può aumentare il rischio di DCA. Questo perché i giovani, soprattutto, hanno sulle spalle il peso della pressione mediatica e cercano di attenersi all'ideale di bellezza diffuso, per sentirsi parte della società nella quale vivono. “Le pubblicità sottolineano la magrezza come standard per la bellezza femminile e i corpi idealizzati dai *media* sono spesso atipici rispetto [quelli] normali e sani: [...] le modelle di oggi pesano il 23% meno rispetto alla media femminile” e influenzano l'idea del “corpo perfetto” che ha la società. [*HealthyPlace, "Eating Disorders: Body Image and Advertising"*] Pertanto, i (neuro-) marketers sfruttano questa insoddisfazione ed insicurezza verso il proprio corpo per indurre le

persone ad acquistare determinati prodotti, beni e servizi volti a raggiungere il paragone malsano correlato al corpo. Poiché sfruttano questa situazione per aumentare il loro profitto, non è nel loro interesse agire a vantaggio della salute degli individui.

Concludendo, si può evincere che non dovrebbe esserci alcuna promozione di comportamenti dannosi e affermare che in molti casi i disturbi alimentari sono una conseguenza delle promozioni di *marketing*. Le aziende non dovrebbero sfruttare la debolezza di alcune persone e danneggiare la loro vita a causa del guadagno. Dovrebbero, invece, competere in un mercato in cui il benessere generale del consumatore, come individuo, prevale su ogni possibile entrata economica.

Questa dissertazione porta ad una conclusione semplice ma cruciale: “Gli inserzionisti devono riconoscere la possibilità che i modelli proposti facciano più che influenzare semplicemente le vendite. È normale che le donne si confrontino con modelli magri, poiché le donne attribuiscono una priorità maggiore al peso personale rispetto agli uomini. La pubblicità fornisce spunti sociali nella costruzione del sé individuale. Questi segnali sociali sono molto importanti non perché determinano esattamente ciò che il pubblico percepisce di essere, ma perché i segnali sociali stabiliscono quali gruppi di attributi saranno più importanti nell'individuo" [*Psychology, Marketing and Eating Disorders: Integrating the Evidence From the Literature*].

Allo stesso tempo, la responsabilità non deve essere affidata solo ai venditori. La loro pubblicità influenza la società, ma vale anche il contrario. È necessaria maggiore cautela da entrambe le parti. Sono necessari nuovi modi per attrarre il pubblico sia per favorire la salute individuale sia per i *marketers*: in primo luogo, ci sarebbero meno soggetti afflitti da disturbi alimentari e, in secondo luogo, si farebbe molta meno critica nei confronti dei promotori, costantemente interrogati da esperti e non.