



Università
Ca' Foscari
Venezia

Master's Degree
in Management – Innovation & Marketing

Final Thesis

**Altromercato and the fair trade coffee industry:
a neuromarketing research on packaging choice
relations.**

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Academic Year

2021 / 2022

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Introduction

The main focus of this thesis will be the application of Neuromarketing practices to the analysis of Altromercato's coffee packaging, in order to better understand how aligned they are with respect to the company's intent to be perceived as a supplier of sustainable and fairly traded products.

Neuromarketing is defined as the discipline which applies the principles of behavioral science and neuroscience to marketing practices. Nowadays, companies have to understand how consumers' brain works and to which stimuli it responds in order to create products and communication campaigns fitting with consumers' needs and wants. In this way it will be possible for the company to stand out from the crowd of competition, being not only recognized, but actively chosen. After misconceptions lasted for two centuries, Neuromarketing has been finally recognized as a science (Levallois et al., 2021), not all the companies are ready to invest in neuromarketing research. For sure, at the beginning, an extra economic effort would be required but it will be subsequently repaid in terms of time and money earned. When taking into account the application of neuromarketing practices it is possible to speak about saving money: the aim of this research is to give some hints, information and guidelines to the company not to waste resources, such as time and money, on the creation of elements which will not add any particular value to the product, or service, from a consumers' perspective.

For the purposes of this thesis an experiment ad hoc on coffee packaging has been organized in order to demonstrate how Neuromarketing works, what it tells and how it can be applied. The above-mentioned empirical research has been conducted on six different coffee packages to understand which ones were the most and the least preferred and why by target customers of fairly traded products. It is the case to remark the fact that the coffee packages used were real samples for existing products created by Altromercato, which was willing to renew its coffee packaging.

The thesis has been structured into four chapters to provide both a background and context to the reader. To understand what Neuromarketing is, it is necessary to be aware about the specific context on which it is applied. Thus, the first chapter will give a general introduction on Brand Management and Marketing Management fundamentals: this will allow an understanding of companies' drivers during the decision making process. The second chapter, instead, covers another fundamental aspect of Neuromarketing as it focuses on its main

components: behavioral science and neuroscience. Along this chapter the reader will gain knowledge about the studies which have been conducted over the centuries on the functioning of the human brain and its irrational and unintended response to certain stimuli, until the acknowledgment of Neuromarketing as it is known today. In Chapter 3 a particular focus will be made in order to present Altromercato, the company provider of the coffee packages which have been tested, and its context: the one of fair trade. This will help the reader to better understand the purpose and the market positioning of this firm, willing to make the difference in favor of a sustainable future. The last chapter will finally present the above mentioned experiment and its outcomes, the reader will be able to follow the process step by step from the pre-experiment phases until the data analysis and the drawn up of conclusions. At the end, a concrete demonstration on the possible application of neuromarketing practices will be reported, and the results of this experiment will give information about the decision making drivers of the tested subjects, allowing a complete and coherent understanding of consumers' preferences on the tested coffee packages.

Chapter 1

Brand Management

1.1 Marketing Management

Brand Management is one of the many branches of Marketing Management.

Kotler considers marketing as the action of “meeting needs profitably” (Kotler and Keller, 2012) and, it is right from this perspective, that he has defined the idea of *marketing management* where the key concept is the one of exchange. Indeed, marketing management is applied whenever, during an exchange process of value creation between two parties, the main focus of the former is to meet needs and wants of the latter. This process has been defined by Kotler and Keller in their book “Marketing Management” (Kotler and Keller, 2012), as “the art and science of choosing target markets and getting, keeping, and growing customers through creating, delivering, and communicating superior customer value”.

Moreover, it is also important to highlight the duality which can be expressed by the concept of marketing as a whole (Kotler and Keller, 2012), indeed there are two possible approaches to be considered: the social and the managerial one. The former approach is exactly the one which better translates the authors’ idea about needs and wants to be met, it is possible to say that (Kotler and Keller, 2012) “marketing is a societal process by which individuals and groups obtain what they need and want through creating , offering , and freely exchanging products and services of value with others”. For what concerns the managerial point of view, there is always a big specification to be brought into light which is actually the fact that marketing can’t be defined as (Kotler and Keller, 2012) “the art of selling products”, marketing is about many many things but for sure selling is not the unique objective. When a concept is too wide to be completely understood a possible thing to do is to understand what it is not. The management theorist Peter Drucker expresses this idea very well when saying (Drucker, 1973): “The aim of marketing is to make selling superfluous. [...] is to know and understand the customer so well that the product or service fits him and sells him itself”.

As it is possible to notice, marketing finds its core focus on the needs and wants concept. What is the link between these two ideas and why are they so relevant when speaking about marketing and marketing management? A *need* is something all human beings require to survive and they cannot live without, a good example of a need can be air to breath. A *want* instead, is something that is not necessary for survival, but which can actually improve quality and living standards. Most of the time wants are different in every society because they are

mostly shaped by it. The link between these two core concepts can be expressed as: once there exists a product or service satisfying a *need*, this one becomes a *want*.

It is important to highlight the fact that it is not marketing which creates needs, it is actually one of the worst pre-concepts about the topic. As it has already been stated “*needs* are the basic human requirements” (Kotler and Keller, 2012) thus they cannot be created by marketing, they exist regardless and before of everything else. The only possible action to be taken by marketers is to nudge the society toward some wants (Thaler and Sunstein, 2008) but it does not mean that everyone will buy anything.

Another important contribution that Kotler brought with his book ‘Marketing Management’ has been the updated version of the marketing mix idea.

This concept was introduced for the first time in 1960 by McCarthy, an American marketing professor and author, in his book (McCarthy, 2002) “Basic Marketing: A Global-Managerial Approach”. McCarthy during his career recognized four basic elements to be taken into consideration during every marketing activity and he introduced the *Four Ps of marketing* (Figure 1.1), being them: *product, price, place and promotion* (Kotler & Keller, 2012).



Figure 1.1 – *Marketing Mix Components* (Kotler and Keller, 2012)

Marketing involves many different agents as people and environment, as we are living in a fast changing world marketing needs to follow the flow by changing and adapting to the circumstances. Nowadays it won't be possible to practice marketing as it was done more than 50 years ago, the world has changed as well as priorities, the focus is no more on the product. At the very beginning organizations were product driven, consumers wanted products to be cheap and easily accessible and firms, in order to meet their demand, were focusing on a low

cost production and mass distribution. Then firms realized that selling a product was not enough, also post-purchase services were important and from this idea a lot of literature about service marketing was introduced. Services were both physical and intangible, after this shift the axis moved toward the so called experiential marketing. Services were not enough anymore, what became relevant was the context and the emotions triggered during a specific experience, often linked to a product or a service, which helped the firm build a relationship with the consumer. Design was very important (LeadersIn, 2015), it brought the focus toward the marketing aesthetics concept which aimed to stimulate and create different touch points in order to better connect with the user for a long term interaction. More broadly, it is possible to say that there has been a shift from transaction-based toward relational marketing (Figure 1.2). Being the former based on a one-shot transaction theory where, after the selling moment, the interaction with the user was supposed to end. This system follows the traditional Four Ps marketing-mix introduced by McCarthy. The latter is much more about communication, long-term relationship building and customized services. It applies a multiple-shot approach (TechTarget, 2020) with the user and it is more likely to embrace Kotler’s Four Ps updated model.

Transactional vs. relationship marketing

	Transactional	Relationship
OBJECTIVE	Acquire new customers and increase volume of point-of-sale transactions	Improve customer retention and build customer loyalty
LENGTH OF RELATIONSHIP	Short term	Long term
CUSTOMER CONTACT	Minimal	Frequent
TYPE OF MARKETING	Mass marketing and promotion	Personalized marketing
TYPE OF PROMOTIONAL STRATEGY	BOGO, discounts and coupons	Loyalty programs and rewards

Figure 1.2 - Transactional vs. relationship marketing summary (TechTarget, 2020)

This shift of focus, mainly from the product to the customer, has changed many things and brought business firms and marketers to look for new approaches to reach their goals. The concept of *Holistic Marketing* introduced by the authors (Kotler and Keller, 2012) explains very well this new perspective where the key for success is to recognize the independence there exists among all the activities conducted by the firm: it is wrong to focus attention and resources on one aspect only. This new system recognises four main components which are

fundamental for the marketing activity and leave to each of them the chance to adapt and evolve according to the business situation.

The idea of having everything moving around the four concepts of product, price, place and promotion does not stand anymore. Following the new principles of *Holistic Marketing*, Kotler has introduced four new realities to be taken into consideration when thinking about a good marketing mix: *people, process, programs* and *performance*.

Nowadays consumers are firstly seen as human beings and not just as buyers or users, companies dig deep to comprehend and understand them. From this deep analysis some specific processes emerge in order to help the firm build a long term relationship with its consumers. To the authors (Kotler and Keller, 2012), programs (Figure 1.3) play a fundamental role in this new marketing mix because they involve all those activities which must be fulfilled to have the firm reaching all its objectives. Among these fundamental marketing activities it is possible to find all those relevant to McCathy for his 4Ps marketing mix. Performance is intended to be about both profitable and non-profitable outcomes moving toward an horizontal axis which comprehends both financial and social implication of the firm. This component reflects very well the holistic marketing ideas (Kotler and Keller, 2012) measuring the company successes on different layers and not only looking at profitable financial outcomes.



Figure 1.3 – *Marketing Mix and Modern Marketing Management* (Kotler and Keller, 2012)

As it is possible to see on Figure 1.4, each broad dimension of the Holistic Marketing concept has some tasks to be successfully completed in order to have a good Marketing Management practice. Under *performance marketing*, ‘Brand & customer equity’ is one of the tasks required to be fulfilled and it is right under this section that *Brand Management* practices start to be applied and developed. They will be consequently extended to all the other dimensions (Kotler and Keller, 2012), following the principle of interdependence between activities.

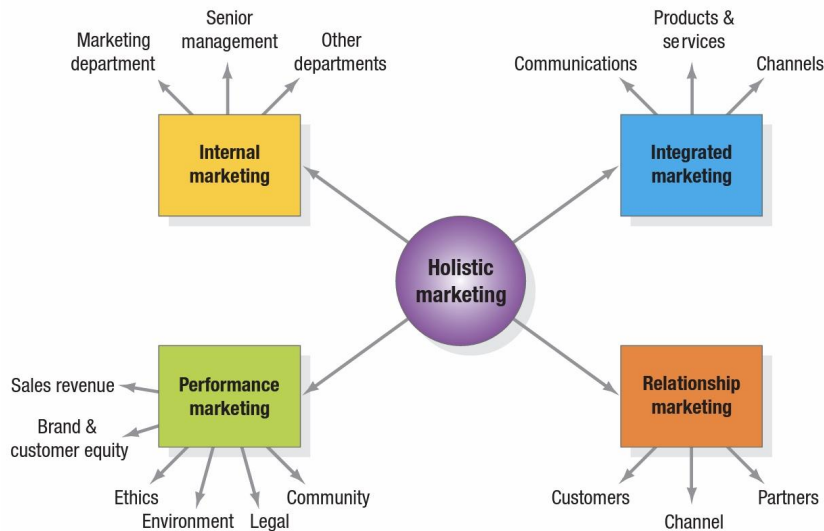


Figure 1.4 - *Holistic Marketing Diagram* (Kotler and Keller, 2012)

1.2 Brand and Brand Management

The act of branding is as old as human beings who started this practice centuries ago branding their own animals and properties with the aim to make their belongings recognizable. Indeed, one of the theories about the origin of the word *brand* itself comes from the action of burning animal skin with hot iron to mark, thus distinguishing them. The first step to take to deeply understand what is Brand Management, is to better define what a brand is and the AMA definition is quite clear about that. A brand is thus defined as (Keller, 2013): “name, term, sign, symbol, or design, or a combination of them, intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of the competition”.

Nowadays, the amount of existing brands is huge for quite every category and firms are in a constant battle to emerge from the crowd. During the last decades firms have faced a change in their commercial environment mainly due to a decrease in consumers’ time and an increase in competition, as a result the tv-industrial complex is no longer working.

Brand relevance can help but the key is to be remarkable to the consumers who are constantly bombarded with advertising and promotions which have no longer effect on them (TED, 2007): they choose to ignore everything which seems boring.

To capture potential buyer’s attention firms need extraordinary stories, they need to add Godin’s extra *P* to their marketing mix. The American writer and businessman Seth Godin has introduced the concept of the importance of being remarkable in his book (Godin, 2002) “The Purple Cow” published in 2002.

From the first marketing mix introduced by McCarthy in 1960 additions and modifications of the Four Ps have been many. To Godin there is a new fundamental P which should be considered in every marketing mix (Godin, 2002), it is the one standing for *Purple Cow*. It can be considered as a very good metaphor reflecting the author's ideas about the relevance of *being remarkable* (Godin, 2002): if among a flock of common cows stands a purple one as well you would notice and speak about the unusual one. Being all the other cows boringly brown, the purple one would be a novelty worthy of having people making a remark about.

Only being remarkable would enhance the spread of ideas and get people to notice your product or service (TED, 2007), this would allow a company to stand out from the crowd. This concept sticks not only for business firms but also for brands which can be considered as the first 'line of defense' against competition. It is very important for a good marketer not to underestimate the value that a brand can have and how it influences users and potential buyers, indeed a brand is more than a simple logo, its financial value is intangible and most of the time is the most valuable asset a firm can have. A brand can be a unique key for success (Keller, 2013) and the aim of Brand Management is to allow firms to maximize it.

If we consider a brand as a bridge connecting the company product proposition to consumers, it is possible to measure its equity in two different ways. From a company point of view everything can be translated as the financial value of the brand which depends on many many factors such as the price of the product. On the other hand, it is possible to speak about (Keller, 2013) *customer-based brand equity* (CBBE) which is the case when "the power of a brand lies in what resides in the minds and hearts of customers". This concept, together with other fundamentals on brand management, was introduced by Keller in 1993 when publishing for the first time his book "Strategic Brand Management" (Keller, 2013).

1.3 Brand Resonance and the Corporate Brand Identity Matrix

It has already been highlighted the importance of having a strong brand, and Keller has introduced a suggested path to be followed by firms willing to build a successful brand. The first step to be taken regards the *Resonance model* which can be considered an important guideline when assessing both brand *identity* and *image*. These two terms are wrongly used interchangeably but it should not be the case as they are far from having the same meaning: the former is about the ideal perception of the brand from an organization point of view (Keller, 2013), the latter instead is much more about consumers' expectations and experiences about the brand.

For a company, having a good *brand identity* could represent a good start and it appears that the best way to do so is to adopt the *Corporate Brand Identity Matrix* (CBIM) framework (Urde, 2013) which, despite all the previous ones, unifies all the theoretical and managerial fundamentals needed for both corporate and product branding (Figure 1.5).

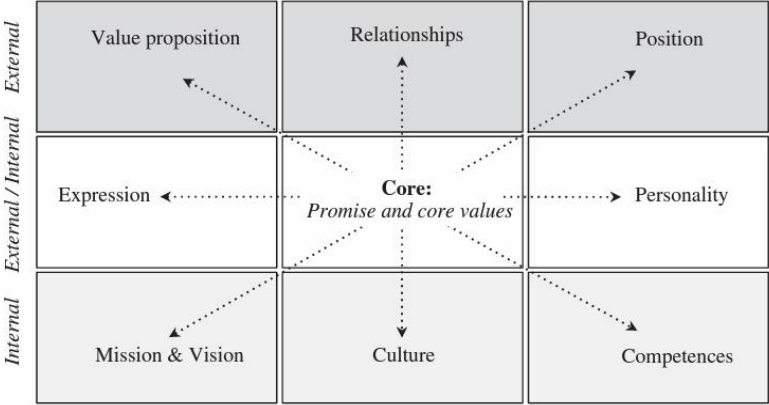


Figure 1.5 - *The Corporate Brand Identity Matrix* (Urde, 2013)

The above-mentioned matrix is composed of nine elements considering internal and external factors as well, when having its main focus on the brand *core values* in order to build a strong complete brand identity. Looking at the figure from the top, the first horizontal line includes the most important external components, also defined as *receives* which are: value proposition, relationship and position. The central horizontal block represents all those hybrid elements which can be seen as both internal and external being the expression, the core and the personality of a brand. Last but not least, the third row includes all the internal components, also called *senders*, for a brand identity which are about mission & vision, culture and competences. Companies do not use this matrix to describe a brand identity only (Urde, 2013), it can be useful when a brand identity definition, redefinition or alignment is required. Now that a clear distinction has been made on brand identity and image subject, it is possible to focus on the above-mentioned *Resonance model* (Figure 1.6) which was presented by Keller as a pyramid composed of six building blocks.

These blocks represent a step by step process where the company will be required to answer some specific questions in order to demonstrate that the brand can provide value, thus it will generate consumer-based brand equity.

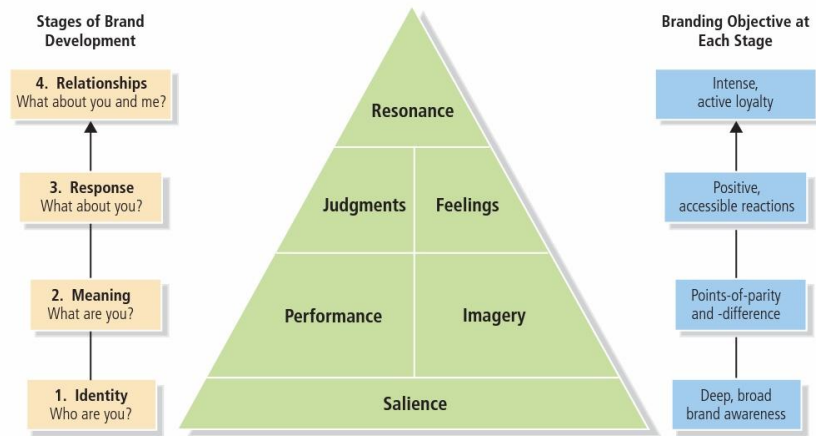


Figure 1.6 - *Resonance Model by Keller* (Keller, 2013, 108)

The base of the pyramid is right about brand identity building and the concept of *salience* (or *awareness*) being defined as (Keller, 2013) “customer’s ability to recall and recognize the brand under different conditions and to link the brand name, logo, symbol, and so forth to certain associations in memory”. The best degree of awareness a brand can reach is to be a top-of-mind brand, meaning that it will be the one standing out from the crowd: the first one coming into customer mind when thinking about a specific product or service. Being a top-of-mind brand means to be the first one of a category. Understanding its brand salience, a company will be able to answer the first fundamental question (Keller, 2013 and Medium, 2019) ‘Who are you?’ and be able to move forward. The second layer of the pyramid is composed of two building blocks: *performance* and *imagery*. In the former block the interaction with consumers is measured in terms of functional needs satisfaction (Keller, 2013); the latter block instead recalls the above-mentioned idea of *image* (Medium, 2019) which is about the real perception that users actually have on the brand, this concept can be defined as the social currency of a brand. The third layer is composed of two additional building blocks as well: *judgments* and *feelings*. The section is entirely dedicated to the response a company has about their brand from its consumers. People are always judging, even unwillingly (Medium, 2019), and these judgements are the result of their evaluation and personal opinion on the brand which are summed up to what is evoked at an emotional level. The key element of this layer is to have positive responses from customer’s behalf in order to ensure a successful brand perception (Keller, 2013), thus a strong CBBE. At the top of his pyramid, Keller (2013) collocates the concept of *resonance* which focuses on the relationship that exists between brand and user, it is not always easy to arrive at this point, sometimes the biggest problem a brand can face is about the instoration of a relation with its users during the

business journey. Brand resonance is about how much the consumer feels in harmony with the brand, its proposal and its values, when it is high there is a good probability for a company to retain customers.

1.4 Brand Elements and Brand Book

A good brand identity is fundamental for a firm to enhance the customer-based brand equity, accurately choosing the right brand *elements* to favor a unique perception of the brand, even in brand association terms, can help. To Keller (2013) there are basically six main criterias to be followed by companies when selecting brand elements, by definition a brand must be: memorable, meaningful, likable, transferable, adaptable and protectable. Being a brand is ‘the first line of defense’ against competitors, these attributes proved to be fundamental for both offensive and defensive strategy. Basically a brand can be considered as memorable (Keller, 2013) when it reaches the top-of-mind level in the Aaker’s pyramid (Figure 1.7) having in this way an easy recall and recognition; a brand is considered as meaningful when it provides some general or specific information to its user and likable when it is aesthetically pleasing.

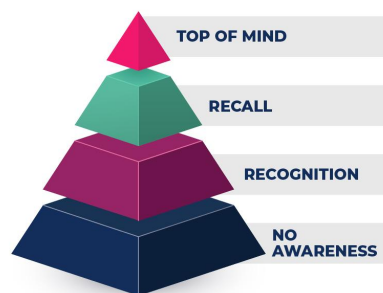


Figure 1.7 - Aaker’s awareness pyramid (Reboot Online, 2021)

These first three attributes grant the offensive strategy (Keller, 2013), for the defensive one the other attributes must be considered. The transferability of a brand concerns the ease with which it can be transferred to different market categories, for instance when a new product of the same line is launched. Instead, adaptability and protectability attributes (Keller, 2013) concern respectively the ease with which a brand and its elements can be updated to be always in line with the fast moving environment and the degree to which they are legally protected by law. Following these principles a firm will create, select and establish all brand elements and collect them in the firm’s brand book which, together with the CBIM, will set all the necessary guidelines (Keller, 2013) to build a strong and coherent brand inline with the company’s values.

A brand book usually contains all those information which are fundamental for the visual perception of the brand itself (Keller, 2013), it contains at least all the guidelines for the setting of brand name, logotype, payoff, lettering, packaging methods. A good brand name is a fundamental key for success and some useful tips for a good brand name want it to be: easy to spell and retain, potentially short and unique of course. The logotype information is more specifically about the brand logo, all possible variation according to its use and the brand color palette. To some brands a specific color represents a strong competitive advantage and they can decide to patent it in order to have all the legal rights on it. The payoff is the catchy phrase which, in customers' minds, goes in direct association with the brand, it is the slogan which embodies the essence of the brand. The lettering information is about the specific font used for all the communication aspects of a brand, there can be a font for the logo itself, for the payoff, the web communication and so on, it can be patented as well. Finally, the information about the packaging can be several, from the shape to the color, the logo positioning on it and the positioning of all the other informative elements of the product (Keller, 2013). These are just some examples about what can be found on a company brand book but they are fundamental in order to create a strong customer-brand equity because they ensure coherence among all brand segments supporting the process of brand association, thus awareness.

1.5 Brand Positioning and Brand Purpose

Another key concept for the creation of a strong brand equity is the brand *positioning* which is not about where the company wants to be, instead, it is about what people think about your position in the marketplace: it is about different perceptions.

The company has to look at the competition also considering the customer's point of view (Keller, 2013) because, as it has already been stated for the Resonance model, people are always judging and making comparisons among products. It is a fundamental step to be taken by every company in order to be able to develop an effective marketing strategy.

A perceptual map (Keller, 2013) is the tool used by business firms to measure their brand positioning, it is a sort of bi-dimensional chart, similar to the cartesian plane, having at the extremes of both axes the four elements on which the brand positioning will be built. These elements are usually the opposite, for instance, if a coffee company A wants to build a perceptual map, some reasonable value to take into account and position at the extreme of the axes can be: premium vs basic and cheap vs expensive coffee. As a result, the company will be able to see its brand through its user's eyes (Keller, 2013), understanding its points of

parity and differences with the competition. So, the coffee company A will be able to understand how its products are perceived by consumers with respect to other coffee brands, being them B and C. Their coffee can be perceived as more premium with respect to the one of company C but less premium with respect to the one of company B. This kind of information is fundamental for every firm because it can be very useful for a company to understand its *purpose* (TED, 2009), inspire people and be remarkable. The author Simon Sinek (2009), specialized in communication and leadership, defines and explains very well the concept of brand purpose with his idea of the Golden Circle (Figure 1.8).

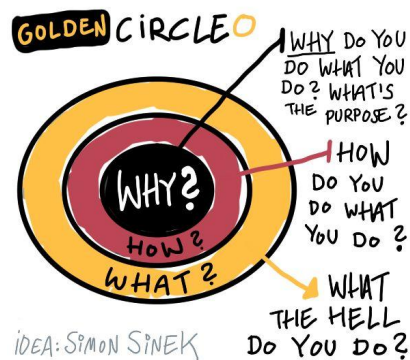


Figure 1.8 - *The Golden Circle* by S. Sinek (AW performance, 2017)

He explains why some companies are able to inspire other people and others are not, through the simple image of three concentric circles. Basically, every company knows what and how they are doing things but very few know *why* (Sinek, 2009): that is what makes the difference. The what section corresponds to the mission of the company, one of the core values of the CBIM to be immediately identified, every established firm knows what they do. The next level is about how companies do what they do (TED, 2009), it can be about their competitive advantage but it is not about purpose yet.

If the mission of a company is built upon its what, the key to understand its purpose is to look at the inner circle of the figure. The why is about what the firm is standing for (TED, 2009), about its existence and especially it is about *why the others should care about*.

Knowing the purpose allows those lucky companies to communicate differently and more effectively with users by using an inside out communication technique. They will start saying why they are doing their business and only after they will tell what they do, it is much more inspiring to people because, as Sinek (2009) always says “People don’t buy what you do, they

buy why you do it". To Sinek (2009) the key for success is not doing business with people liking what you are doing but with those sharing your same beliefs.

In the next chapters some neuroscience concepts will be introduced to explain as clearly as possible Neuromarketing and all its implications but already here there is something to say, because what stands behind The Golden Circle theory is a pure biological cause.

Human brain is mainly divided into three sections, for the moment it is enough to focus on the first two (TED, 2009): the neocortex and the limbic system. The former is the most external one, it corresponds to the what level and it is responsible for human rational, analytical thoughts and language. The latter is the middle section responsible for feelings, behavior and decision making process, it corresponds to the how level. This explains why, when a company can practice an inside-out communication strategy (TED, 2009), it immediately reaches users' feelings and only after it is rationalized.

In this chapter all the fundamental concepts concerning marketing, brands and brand management have been introduced. To sum up, it is possible to say that consumers' needs and opinions are strongly taken into account by companies for every decision. Brands themselves are built on them and the brand equity which accounts the most is the customer-based one.

Human beings are not completely rational and nowadays everything is about experiences and feelings, this can create confusion for business companies. Sinek has shown us that the key is understanding how the human brain works to adapt the right communication strategy, of course it is not easy and it will not ever be enough but it can give important hints.

Among other things, the next chapter will be right about how to deal with the human brain, analyzing some Neuroscience theories which have been developed during the last decades.

Chapter 2

From Behavioral Sciences to Neuromarketing

The word *neuromarketing* appeared for the first time in 2002 thanks to Ale Smidts, a Dutch organizational theorist and university professor, who was able to discover some new innovative ways to better understand customer's brain stimuli.

After this discovery, *Neuromarketing* could be considered as (Diotto, 2020) the application of behavioral science and neuroscience to the marketing field, in order to better understand what happens in the customer's brain during the decision making process and how it responds to different stimuli. The key for a better understanding of this science is to start from the analysis of Behavioral Sciences (NeurExplore Srl, 2022), moving toward fMRI and Neuroscience, and at the end finally approach the concept of Neuromarketing.

2.1 Behavioral Sciences

The branch of *Behavioral Sciences* is pretty wide, involving many sciences such as psychology, anthropology and sociology; it studies human's behaviors and actions.

Nowadays, the behavioral sciences approach is used in many many fields, especially for the economic one. Looking at the winners of Nobel Prizes for the economy during the last decades, it is possible to notice that the majority of them comes from the behavioral sciences world (NeurExplore Srl, 2022), Daniel Kahneman and Richard Thaler are good examples. Why is that? This branch allows a better understanding of what really drives people's decisions: it has proved to be very useful (Thaler and Sunstein, 2008) if taken into account when it is necessary to take decisions regarding governmental financial systems, companies, health insurance policies and many others. Sinek's Golden Circle introduced in Chapter I is another example of the importance of understanding how the human brain works and to what it responds.

2.1.1 System 1 and System 2

The psychologist and godfather of behavioral economy Daniel Kahneman, with his most famous book "Thinking, Fast and Slow" published in 2011, tries to explain some key concepts about human brain functioning and human decision making processes.

One of the most important novelties introduced by Kahneman (2011) is about the existence of two operating systems inside the human brain, which he simply calls *System 1* and *System 2*.

The former system is the *fast and unconscious one* (Kahneman, 2011), it is responsible for quite 98% of human thinking activities and involves everything which comes up automatically on human's minds. In this case, the human brain is settled on a free flow mode of *cognitive ease* where first intuitions and impressions are usually followed because here impulses and emotions reign. The latter is *slower and conscious* (Kahneman, 2011), it covers the remaining 2% of human thinking activities which are about deliberate actions and self-control. This demonstrates that most of the time human beings are irrational, during the decision making processes they think to have reasons behind their decisions but it is not always the case. Usually, a reason exists only after having wondered 'why?' (Inc., 2013), before humans are not completely aware about it and even after, it is not correct to say that the reason which has been found is responsible for a specific action. So, the relationship between moves and outcomes is not as simple as it seems (Kahneman, 2011); sometimes human beings can gain advantages from System 2 which, slowing down everything, allows noticing something that wasn't seen before by the faster system.

It is possible to say (Kahneman, 2011) that some mistakes are avoidable when moving the reasoning to System 2. System 1 is about instinct responses based on the information gathered in our brain as a result of personal experiences, context, cultural factors ecc. Most of the time these responses are based on one's first impressions and they can be wrong, but what is very interesting to be noticed is that (Kahneman, 2011) there are situations in which people know they are making mistakes but they keep thinking they are right because of System 1 responses. A good example to be considered to better explain this concept stands on visual illusions: books are full of tricky images with two segments which are apparently of two different lengths or where you are asked to state which segment is the longest. You can tell it by looking at the image, the problem is that there is no difference between the two segments and you can verify it by measuring them. Even if you have seen that the length is the same for both segments, your eyes will keep seeing one shorter than the other. You know that what you see is wrong, you know which one should be the right answer but your point of view feels to be right anyway (Inc., 2013): this mechanism is called *cognitive illusion*.

2.1.2 Halo Effect and Anchoring Effect

System 1 allows the human brain to take some short-cuts to save time and effort, in order to have an immediate response to a specific stimulus which is not meant to be right or rational but it simplifies the cognitive load of the decision making process and gives satisfaction.

This process of shortcuts is known as *heuristic* (Kahneman, 2011) and its outcome is based on personal experience, not on theory, therefore most of the time, this gut response implies errors known as *cognitive biases*.

The *Halo Effect* is one of the most common cognitive biases and it influences the way in which we see and perceive people and situations, it is defined by Kahneman (2011) as “the tendency of liking (or disliking) everything about a person, including things that you have not observed”. Thanks to this bias, System 1 creates distortion on the perception of reality which results much easier and coherent than what it actually is.

An example to better understand this effect can be the one about Jane’s generosity: you are at a party and you meet a good looking and very nice woman to chat with, called Jane. At the party it is possible to raise charity foundations and there is a list of all the potential contributors where Jane’s name appears. What do you know about Jane’s generosity? Absolutely nothing, there is no reason to think that Jane is generous because she has proved to be agreeable in a social situation but you really like her and you also like generous people and generosity. Thus, by association you will have the tendency to consider Jane as generous even though there is no real clue about that. This lack of evidence (Kahneman, 2011) is fulfilled by the emotional response given by System1. The Halo effect is generated not only by a direct emotional attachment (Kahneman, 2011), as Solomon Asch demonstrated, there are some situations in which this effect is the result of a gradual accumulation of evidence which are interpreted on the basis of the first impression. It is the case when you are asked to comment on the personality of two people (Kahneman, 2011), being them A and B, after having read a list of adjectives describing them.

A: intelligent, hardworking, impulsive, critical, stubborn, envious;

B: envious, stubborn, critical, impulsive, hardworking, intelligent.

As it is possible to notice, the adjectives reported are the same for both, what changes is the order in which they are presented: this is enough to influence the way in which you will perceive A and B’s personalities. The majority of people subjected to this experiment have judged A more positively than B, the reason behind this outcome is the fact that the first adjective presented in A, is commonly perceived as positive whilst the first one of B, is commonly perceived as negative. The first impression (Kahneman, 2011), that one will have reading the same list of adjectives, will be positive for A and negative for B and it will be the main driver for the final decision.

Another important cognitive bias to be taken into account is the *Anchoring Effect* which occurs when people, in order to assess a value to an unknown quantity, start from an already existing one (an anchor) which will influence them and not lead to an objective evaluation.

This kind of phenomena is one of the most studied in psychology and the potential outcomes of anchoring effects are several, it is possible to say that (Kahneman, 2011 and The Decision Lab2, 2022) any number given to someone who is asked to estimate a value, will cause an anchoring effect. Nevertheless, experiments have demonstrated that there exists two different kinds of anchoring which originated in two different parts of the human brain.

The first type of anchoring is known as *Anchoring and adjustment heuristic* and it is an intentional adjustment taking place on System 2. In this case the estimation process starts from a specific number which is adjusted along the decisional path, increasing or decreasing the value according to one's personal judgment, thus moving more or less away from the anchor. Most of the time (Kahneman, 2011) the adjustment is not sufficiently accurate and this may lead to an error. This effect explains why it is difficult for people to immediately adjust the speed of their car once they have left the highway, their anchor value of speed is higher than the required one, they will of course slow down but not enough to reach the new allowed speed limit.

The second kind of anchoring works as the *Priming effect* - which will be better explained in the next section - and it is unconsciously driven by System 1. As it has been seen before, the adjusting activity is a mental process which happens consciously but, most of the time the anchoring effect does not reflect the subjective experience (Kahneman, 2011) because it is unconsciously influenced by other factors.

Considering the questions:

- 1) Was Carlo Magno approximately 102 years old when he died?
- 2) How old was Carlo Magno when he died?

It is hard to believe that Carlo Magno lived until he was 102 year old, especially due to the lifetime expectancy of those years, but the association of ideas triggered by question 1 creates some doubts. So, when it comes the time to answer question 2 a human being will be influenced by what happened previously, he will get not only the wrong answer but he will probably state an age near to the value of the anchor - 102 in this case. This happens because System 1 unconsciously works to build an answer corresponding to the given anchor (Kahneman, 2011), the outcome will be an error but it will be coherent with the previous association of ideas.

2.1.3 Priming and Nudge

Cognitive biases are many and knowing about their existence can be helpful especially when working to satisfy human real desire. When having to sell a product in the market it is not enough to have a potential customer who likes the product, people like many things but they do not buy everything which is available. What really makes the difference is whether there has been or not a triggering on the right mechanisms of association (NeurExplore Srl, 2022) which will lead the potential customer to buy the product. The distinction between System 1 and 2, has been the big Kahneman's breakthrough and it fits perfectly with another fundamental concept to be known: *the Priming Effect*. This *effect* has been studied for many years by many psychologists and has turned to be fundamental to set the basis about the importance of ideas association. Kahneman (2011) mentions this important cognitive process in his best-seller book when speaking about all the unconscious actions for which System 1 is responsible. The priming effect can manifest in different ways and it is not limited to concepts and words, as once it was believed to be, and it is defined as (The Decision Lab, 2022) "an individual's exposure to a certain stimulus influences his or her response to a subsequent stimulus, without any awareness of the connection".

During the 80s many experiments were made to understand how *priming* was supposed to work and, a very basic example will be now used to better explain this concept.

If you have heard the word 'eat' and then you see some letters written as 'so_p', the first word which comes to your mind is 'soup'; if instead you have heard the word 'wash' immediately before, you won't think about the word 'soup' but about 'soap' (Kahneman, 2011). Why is that? This different association of ideas happens because the human brain stores and divides into schemas (or units) different categories of daily life background, the two words above mentioned pertain to two different categories. A specific stimulus will activate a category which is coherent with it (The Decision Lab, 2022) thus, by association, the word 'eat' will associate to the incomplete word a letter which will give a word coherent with its own category. The human brain is very complex and the possible outcomes of priming effects are several, the most important ones to be known are four (Diotto, 2020): *positive and negative priming, semantic priming, repetition priming and perceptual priming*.

Positive and negative priming happens when (Diotto, 2020 and The Decision Lab, 2022) the exposition to a specific stimulus determines an acceleration or a reduction on the ability of information processing. In *Semantic priming* the process of association is based on the word itself and its linguistic or semantic meaning (Diotto, 2020 and The Decision Lab, 2022), indeed if the stimulus is the word 'doctor' and the brain is subjected to two different words

‘dog’ and ‘nurse’, it will immediately recognise the former word. The *Repetition priming* is also called *direct* priming (Diotto, 2020 and The Decision Lab, 2022) and it is generally seen as a positive one, it consists of the pairing of more stimuli which will speed the association of ideas. Last but not least, the *Perceptual priming* occurs when the form of the stimuli is similar (Diotto, 2020 and The Decision Lab, 2022): having a word, the perceptual priming will associate to it another word which may not pertain to its schema but which is written in a similar way, this leads to this kind of idea association. Being this process driven by subconscious actions, it can not be avoided but it is possible to take advantage of it.

Priming practices can be used to guide the user during the decision-making processes by triggering the right association of ideas (Thaler and Sunstein, 2008), it can be taken into account to nudge people in their daily decisions about health management, education and more, changing the choice architecture. The concept of *nudging* has been introduced by Richard H. Thaler and Cass R. Sunstein in their book “Nudge” published in 2008 where they define a *nudge* as (Thaler and Sunstein, 2008) “any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives”. A very good example, which will also give the idea of what is a choice architecture practice can be the one of the cafeteria. It has been demonstrated that simply changing the way and the order in which food is presented to students, thus changing the way in which the context is organized, impacts on food choices. For example, if the aim is one of encouraging a healthier diet, it is possible to nudge students by positioning fruits at eye level and junk food as the last option in a corner. It is important to remark the fact that nudges are not meant to limit human choices (Thaler and Sunstein, 2008), if one of the available options is removed, a nudge practice is not taking place. Taking into account the previous example, it is possible to say (Thaler and Sunstein, 2008) that there is a nudge to encourage healthier options because both fruits and junk food are available options, what has been changed was their choice architecture; if instead the cafeteria would have banned junk food, that would have been a mandate and not a nudge.

2.2 Neuroscience and Human Brain

The importance of understanding how the human brain responds to stimuli has been brought to light in the previous section, in this one the *Neuroscience* perspective will be taken into account with the aim to understand how the human brain functions and processes information. First thing first, Neuroscience is defined as (Biology Dictionary, 2017). “ the study of the nervous system, which includes the brain, spinal cord, and nerves. The brain controls every

aspect of the body, from emotion and memory to basic bodily activities such as movement, breathing, and controlling the heartbeat”. It is considered a branch of biology and it requires different approaches to be understood in its whole complexity (Diotto, 2020) but basically, the main focus is studying the human brain and the ways in which sounds, words and images are codified and uncoded. Neuroscience can be considered one of the oldest fields ever studied (Kosslyn & Miller, 2013), indeed it can be dated back to the Neolithic period, more precisely in Ancient Egypt where brain trepanation was practiced to cure disease. This branch continued to be studied all along for years and centuries but only during the 20th century thanks to new discoveries (Diotto, 2020 and Biology Dictionary, 2017) in the fields of nuclear biology, electrophysiology and computational neuroscience, scientists had the chance to adopt new techniques and significantly advance their research. During those years many scanning techniques allowing a deeper understanding of brain functions and activities were developed but it was only in the 1990s (Diotto, 2020 and Biology Dictionary, 2017), when *functional magnetic resonance imaging (fMRI)* was introduced and used to map brain activity through the blood flow, that Neuroscience became a first class field of study.

2.2.1 fMRI

Functional MRI has been a big turning point for Neuroscience but its use is not limited to this field, nowadays it is used on a daily basis in the medical sector and it has proved to be very useful in many other fields such as the one of Neuromarketing.

As it has been mentioned before, *fMRI* is used to (RadiologyInfo.org, 2020) measure all the changes in blood flow which occur during the brain activity allowing to detect specific brain conditions which couldn't have been detected otherwise by other imaging techniques.

Functional magnetic resonance imaging is a branch of *Magnetic resonance imaging (MRI)* (NIBIB gov, 2013) which uses radio waves on protons present on the human body and works with the energy produced by the spin of those protons which generates a magnetic charge. MRI practice consists of the creation of a magnetic field with which protons will align. After this first change of direction, a radiofrequency pulse is introduced in the human body causing protons to spin out of their equilibrium to align with this new frequency. Once the pulse is turned off, protons will realign with their previous magnetic field releasing magnetic energy during the process. This energy will become a signal (RadiologyInfo.org, 2020) which will be detected by MRI sensors and then translated into images of a specific part of the body.

With *fMRI*, the above explained practice is applied to the human brain (RadiologyInfo.org, 2020), and during the examination the subject will be asked to perform some tasks such as

tapping fingers or playing word games. These tasks will activate the specific brain areas responsible for them requiring more blood bringing oxygen. Thus, this activation will generate an increase in the blood flow which will be detected and translated into images.

2.2.2 Human Brain Anatomy and Top/Bottom Brain

The *brain* is part of the nervous system and it controls and regulates all the functions of the body. It is a very complex organ (Diotto, 2020) composed of numerous nerve cells responding each to different stimuli which can be generated by the body itself or coming from the external environment. During the years scientists have studied this organ in its complexity and thanks to all the scanning techniques available and subsequently developed, direct studies on human brain and many experimentations (Diotto, 2020), a good knowledge of brain composition and activity has been reached. Nowadays it is full of textbooks more or less detailed about the human brain, here a general functional introduction about brain composition will be made together with the introduction of a relatively new approach. First of all, cognitive functions are never conducted by a single brain area; instead there exists different systems of brain areas working together in order to complete the required task. The brain (Figure 2.1) is divided into three different areas: *brainstem*, *cerebellum* and *cerebrum*.

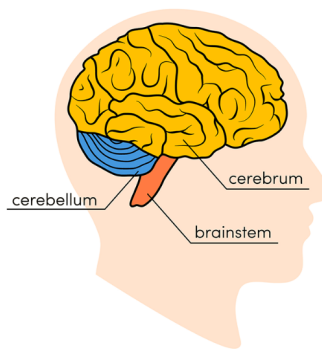


Figure 2.1 - *Brain major division* (Johns Hopkins Medicine, 2022)

The first one is situated at the base of the brain, connecting the brain itself with the rest of the body through the spinal cord. The *brainstem* (Cleveland Clinic, 2021) controls and balances all the involuntary vital functions of the body such as breathing, heartbeat, blood pressure and many other activities. The second one is fundamental for motor control; indeed, it is responsible for coordination, precision and timing. Last but not least, the *cerebrum* is the biggest and most important part of the brain (TeachMeAnatomy, 2018) and, together with the *cerebellum*, controls all the voluntary actions; it is also responsible for sensory processing,

emotions, communications and memory. The cerebrum is mainly composed of two different structures: the *limbic system* and the *cerebral cortex*.

The former structure controls behavioral and emotional responses through the amygdala, the latter is again divided into two parts called hemispheres (Diotto, 2020). According to Roger W. Sperry (Healthline, 2022), the American neuropsychologist who won the Nobel Prize for Medicine in 1981, these hemispheres are called the *left hemisphere* and the *right hemisphere*, are asymmetrical and are responsible for different functions. The former is responsible for all the cognitive functions of the brain, it allows logical abilities such as computations, image elaboration, verbal communication and more. The latter is less about logic and more about creativity, it is linked to the visual and non-verbal field and helps with intuition, imagination, holistic thinking and more.

The cerebral cortex (Diotto, 2020) not only contains the above mentioned hemispheres, but it can be divided into four main parts called lobes which are responsible for different functions of the brain. All the conscious activities involving doubts comprehension and solutions, communication and movement are developed in the *frontal lobes*, the *parietal* ones are assigned to the elaborations of the information perceived through the body's senses. *Temporal* and *occipital lobes* are responsible respectively for the process of auditory stimuli as well for the ones linked to memory, and for the decodification of visual stimuli.

This classification is the conventional one, but it is important to remark on the fact that it has been recently integrated with Kosslyn and Miller's theory about brain division after the publication of their book "Top Brain, Bottom Brain" in 2013.

To the authors (Kosslyn and Miller, 2013), the traditional classification of hemispheres and lobes is not to be considered wrong but rather incomplete because a clear explanation on how left and right hemispheres really function is missing. The big mistake here is the scientists' tendency to analyze one by one the small, different and specific areas of the brain leading to results based on dichotomies. In order to overcome this problem and get more complete information about human brain functioning, it is important to divide the brain into two parts only, classified as *Top Brain* and *Bottom Brain* (Kosslyn and Miller, 2013), each part will represent a system responsible for processing information in a specific manner.

In Figure 2.2 it is possible to see where the four lobes of the brain are situated, moreover another fundamental element for Kosslyn and Miller's theory is represented: the *Sylvian fissure* which graphically divides the brain into its top and bottom parts. This division (Kosslyn and Miller, 2013) allows a grouping of the lobes according to their position, the outcome will see temporal and occipital lobes as part of the bottom part whilst, parietal and

frontal lobes will pertain to the top part. During the years, many experiments have been made in order to test the functioning of different brain areas and the result of them will fit with the following explanation of the general functioning of the two systems.

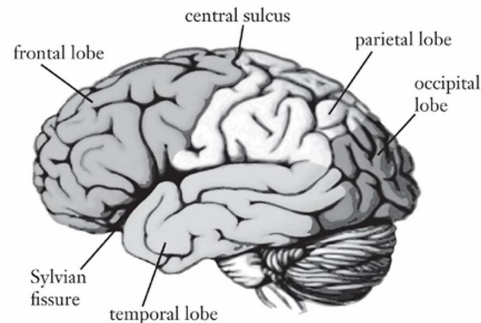


Figure 2.2 - *The four lobes of the brain* (Kosslyn and Miller, 2013)

The *Bottom Brain* (Kosslyn and Miller, 2013) includes the lobes responsible for the processing of visual and auditory input which are in part deviated to a small part of the bottom frontal lobe responsible for emotional memories. As a consequence, it is possible to say that its main role consists not only of the organization of signals detected from the senses, but also of their transposition into the stored memory. This would allow better interpretation and classification of the event, or the object, responsible for the received input from the external world. On the other end, the *Top Brain* (Kosslyn and Miller, 2013) is responsible for plan formulation and execution that requires an understanding of the spatial dimension to complete a certain task. Information about the physical location of the objects are processed by this part of the brain but the location will be useless without the understanding of the objects involved in the plan. This lack of knowledge is fulfilled by the work of the bottom brain which will transmit it to the top through one of the many channels connecting the two systems. As it has already been said (Kosslyn and Miller, 2013), the frontal lobes, among other tasks, control the movement and parietal lobes elaborates the body's sensory responses, allowing this part of the brain to produce movements in order to complete a specific task as planned. Even though Kosslyn and Miller (2013) have divided the brain into the previously described parts it doesn't mean that they act independently, on the contrary these two systems are supposed to always work together indeed they are connected in many different ways. According to the authors (Kosslyn and Miller, 2013) each person uses both systems for basic daily functions dictated by specific situation such as walking toward a place; there are some cases in which it is possible to have an *optional* utilization of these two systems: if a person is

required to dance instead of simply walk, he or she will have the chance to complete the task relying more on one of the two systems. The way in which one chooses on which part of the brain to rely more, depends on the way in which he or she is related with the external environment and involves the optional situations only. This occasional difference on utilization is at the basis of the *Theory of Cognitive Modes* (Figure 2.3) which is defined as (Kosslyn and Miller, 2013) “the degree to which a person relies on the top- and bottom- brain systems”. It is a big breakthrough (Diotto, 2020) because the *degree of utilization* varies for each person and, according to the authors, it will affect and in part determine one’s personality. According to this degree, four basic cognitive modes have been found basing their distinction on the ‘high’ and ‘low’ use of each system.

	Highly Utilized Top	Minimally Utilized Top
Highly Utilized Bottom	Mover Mode	Perceiver Mode
Minimally Utilized Bottom	Stimulator Mode	Adaptor Mode

Figure 2.3 - *Four Cognitive Modes* (Kosslyn and Miller, 2013)

The classification into the four cognitive modes gives some hints on the ways in which people interact and respond to situations. People acting on the *Mover mode* (Kosslyn and Miller, 2013) will be using both parts of the brain highly, this would lead them to be able to implement and register the consequences of their plans, thus adjusting their actions: they are usually leaders. In the *Perceiver mode* the bottom brain system is more used than the top one (Kosslyn and Miller, 2013) allowing those people to have a deep understanding about their perceptions and consequently a clear view of the related implications: in a team they are those enlightening about the ‘bigger picture’. Differently, when the top brain is more used than the bottom one (Kosslyn and Miller, 2013), people adopt the *Stimulator mode* which implies a creative and original personality able to create interesting plans but, in the meantime, not able to analyze all the possible consequences. These kinds of people may have disruptive behavior when left alone, but with a leader they can add big value to the team.

Lastly, the *Adaptor mode* requires a low degree of utilization of both systems (Kosslyn and Miller, 2013) thus people adopting this mode won’t create or interpret plans and signals, they will adapt to the surrounding environment. These people usually are action- oriented and responsible for essential operations which do not involve any extra effort other than the task fulfillment. This basic distinction has turned to be useful in many fields (Diotto, 2020), for

instance taking into account the marketing one: knowing on which mode is the potential user would allow a specific adaptation on the communication practices.

2.3 Neuromarketing

All the fundamental knowledge to understand what Neuromarketing is and its fields of application have been analyzed. It turns out to be clear (Diotto, 2020) the big role of this science in combining together very different disciplines involving economic and marketing principles, psychology, neurology and semiotics, in order to have a better understanding of what guides customer's choices. Even though the word *neuromarketing* was introduced in 2002 by Smidts (Levallois et al., 2021), the discipline was studied for at least two decades before by many neurologists and psychologists willing to demonstrate the brain's functioning.

2.3.1 History and Evolution

The Portuguese neuroscientist and psychologist António Rosa Damásio with his studies demonstrated the fundamental and unexpected relationship between emotions and neuronal and behavioral cognition. In his book “Descartes' Error: Emotion, Reason, and the Human Brain”, published in 1994, he explained the importance of emotions for a good mind functioning; to the author (Damásio, 1994) the human capability of being rational relies on the existence of emotions. The cartesian interpretation separates body and brain whilst Damásio (1994) highlights the importance of having them working together as a unique and sole entity. The brain cannot work properly without emotions being the direct link to the body, which perceiving internal and external stimuli gives to the brain all the necessary information to create images and thoughts: *emotions* are human beings' cognitive dimension.

The author pointed out one of the oldest important distinctions (Damásio, 1994): emotions are actions followed by ideas and thoughts whilst feelings are simple perceptions based on what the human body does. To Damásio's theory what comes first are the above mentioned perceptions and the subsequent expectation of an emotion which will then be triggered (Damásio, 1994 and Diotto, 2020). This theory fits perfectly with the basic ideas on which *neuromarketing theories* have been constructed (NeurExplore Srl, 2022): it is not enough to have people liking your product, it is important to be able to trigger the right emotions to have potential users buying it. This emotion triggering follows Damásio's path and that's the true fil rouge linking neuroscience studies with neuromarketing practices.

As it has already been stated, it is not to set the birthdate of neuromarketing in 2002, the first records of this practice date back to 1960s (Levallois et al., 2021) with Herbert Krugman

studies about *pupillometry*. Krugman was manager and researcher at General Electric where he conducted several experiments to measure clients' pupils dilation when looking at television and paper advertisements. This measurement (Levallois et al., 2021) is the mean with which clients' cognitive activity can be tracked and translated into the degree of attractiveness for the specific advertisement. After these studies many others have been conducted (Diotto, 2020 and Levallois et al., 2021) using the eye tracking tool which allows the *galvanic skin response* measuring as well, giving clearer information about human being's emotional reaction to the advertisement stimulus. During the 80s (Levallois et al., 2021) as well experiments about TV commercials have been carried on with the support of *electroencephalogram* tool (EEG) used to keep track of brain activity and consequently measure the changes in the electrical patterns according to what subjects were watching. At the beginning of the 90s (Levallois et al., 2021) some studies about *positron emission tomography* (PET) were introduced with the aim of analyzing the changes in the human body's metabolic activity of cells to identify particular disease. At the end of the 90s, this practice has been integrated with the introduction of *neuroimaging* (MRI) and subsequently with the one of *fMRI*, which will be the real turning point tool for Neuroscience as it has already been analyzed. The first record on the online databases about a neuromarketing publication is dated June 22, 2002 under the title "BrightHouse Institute For Thought Sciences Launches First Neuromarketing Research Company" (PRWeb, 2002) where experiments with the goal of understanding the true drivers of decision making processes were conducted by the Institute team using fMRI technology. After this, relevant magazines such as Forbes started to write about the topic giving more information about the technologies to be applied for neuromarketing purposes and reporting the outcomes of many experiments which had been conducted. Thus, this new field has been legitimized (Levallois et al., 2021) and in 2004 even the scientific journal Neuron published its first article on the topic recognizing its belonging within the field of sciences. During the first years of 2000s neuromarketing was considered a trending topic but it was not positively seen by everyone (Levallois et al., 2021), many controversies arose especially between academic and entrepreneurs about the role of this new approach. The Danish author and marketing specialist Martin Lindstrom was the first expert who entrusted this new approach and encouraged its application in the marketing industry (Levallois et al., 2021); others saw neuromarketing mainly as a very risky investment especially because during those times patterns of cognitive neuroscience were not clear as well. Around 2007 the controversial situation started to get better (Levallois et al., 2021), other experiments were carried out and, especially in the private

sector entrepreneurs started to see the potential future advantage of investments on neuromarketing research for their products or services. Detailed and well constructed publications on popular magazines increased the audience and legitimated entrepreneurial neuromarketing (Levallois et al., 2021) enabling it to be finally considered as a core feature and not as a niche practice.

2.3.2 Neuromarketing Tools

Neuromarketing took some time to gain its legitimacy but actually is (Alsharif et al., 2021) one of the most popular approaches chosen by companies willing to better understand their consumer and find suitable solutions for them. All along the chapter some of the neuromarketing tools to study customers' behavior, used once but also in current times, have been introduced; in this section a deeper analysis will be made on these tools.

According to the neuropsychologist Thomas Zoëga Ramsøy (2015) neuromarketing tools are several and can be divided into four main categories: *neuroimaging tools*, *physiological techniques*, *self-report* and *behavioral measurement*.

The first category includes all those tools recording changings related to memory, attention and emotional fields of the subject (Alsharif et al., 2021) such as electroencephalography (EEG), magnetoencephalography (MEG), single photon emission computed tomography (SPECT), functional magnetic resonance imaging (fMRI), steady-state topography (SST), positron emission tomography (PET) and functional near-infrared spectroscopy (fNIRS).

Electroencephalography (iMotions, 2021) is used to measure the electrical activity generated by neurons present on the human brain by applying electrodes on the scalp surface. This activity is registered in volts and at the end of the stimulus all the data gathered will be translated into a sequence of values providing information about which cortex area has responded. *Magnetoencephalography* is the best tool to be used (RadiologyInfo.org, 2022) when measuring and evaluating the brain activity during its effective functioning. A SQUID - superconducting quantum interference device - is adopted to measure the neuromagnetic activity generated by electrical currents moving within the brain. The obtained data will be translated into anatomical images of the brain itself to better track the path of its activity.

Single photon emission computed tomography consists of (Mayfield Brain & Spine, 2019) the analysis of blood flow among organs and tissues detected through a nuclear imaging scan which relies on a radioactive tracer which will be absorbed by tissues subsequently emitting gamma rays and CT - computed tomography - encharged to detect those rays and translate the information into a 3D image of the brain. This tool is cheaper and more accurate (Mayfield

Brain & Spine, 2019) with respect to the *PET* one for which the tracer is not absorbed but stays in the bloodstream, limiting the given results and image to the areas where the blood actually flows. As it has been already analyzed in the previous paragraph, *fMRI* is used to detect changes in blood flow as well, the big difference stands on the fact that for this practice any radioactive device is implied. *Functional near-infrared spectroscopy* is another tool which could be considered similar to *fMRI* (Frontiers Media, 2020) but it focuses on the changes of hemoglobin kinds inside the human brain analyzing them separately throughout the application of optical absorption techniques. Despite the previous tools the *Steady-state topography* traces patterns related to subconscious thoughts and memory encoding, thus it analyzes specific psychological processes (Drive Research, 2018) allowing an accurate brain mapping only after one repetition of the stimulus. Other tools such as the previously seen EEG require more repetition of the same stimulus over a period of time to get the brain image. Despite all these available neuroimaging tools, it appears that (Alsharif et al., 2021) the most commonly used for neuromarketing proposes are EEG and *fMRI*.

The second category instead is responsible for the measurement of subjects' physiological functions once they are exposed to a stimulus (Alsharif et al., 2021), they can measure pupil dilatation, heartbeat, eye movement and more. These tools are: electrocardiogram (ECG), electromyography (EMG), eye-tracking (ET) and galvanic skin response (GSR).

Electrocardiogram is commonly used in the medical field for daily check ups (NHS, 2021), it measures electrical activity and heart beats by attaching some sensors to the subject skin which will detect all the electrical signals emitted by the heart. Another practice involving electrodes attached directly to the subject's skin is *Electromyography* (Mayo Clinic, 2019) which analyzes the status of muscle and nerves through the measurement of their electrical activity. *Eye-tracking* and *Galvanic skin response* are the techniques which are more frequently adopted (Alsharif et al., 2021) among the physiological ones. The former tracks down eye movements during the exposure of a stimulus (Eyeware, 2022) measuring the 'visual attention' of subjects involved. It relies on the projection of infrared light on the pupils with a subsequent analysis on their reflection using an infrared camera. The latter measures the emotional arousal of the subject (iMotions, 2018), an increase of it can be due to both positive or negative stimuli thus, it is possible to say that GSR detects the intensity of emotions but it cannot identify them. This practice as well requires electrodes to be applied on the skin. Changes in sweat glands activity will be detected and translated into information reflecting the emotional state of the subject.

The third category (Alsharif et al., 2021) is the one of self-report and includes all the traditional research methods which consist of simple questions to be asked to the subjects under the form of interviews and questionnaires or during specific focus groups on the topic to be analyzed. Nowadays, self-reports practices are mainly considered as complementary research which is usually conducted before using the above-mentioned neuromarketing tools and techniques.

The last category focuses on (Alsharif et al., 2021 and Bitbrain, 2020) behavioral measurement through the utilization of *Implicit Association Test* (AIT) and *Priming Test* with the aim of revealing unconscious attitudes and hidden biases of the tested subjects. These tests found their theoretical basis on Kahneman (2011) and his breakthrough about System 1 and 2 which have already been explained, together with the implications, in the previous paragraph. The former test wants to avoid cognitive biases to affect the subject's responses and for this reason tries to work on an unconscious level asking for quick and fast classification of words and images into their corresponding groups. The latter test instead focuses (Bitbrain, 2020) on the strength of association between stimuli, which are usually two, and attributes - or primes: the subject is required to compare the two stimuli by classifying the respective attributes through association.

All along this chapter the basis to understand both the aim and the origin of Neuromarketing practices have been explained, it is possible to say that scientists' willingness to better understand how the human brain works and to which kind of stimuli it responds has been a fundamental driver for decades. The next chapter will focus on human beings and their needs as well from a fair trade business perspective.

Chapter 3

A Fair Trade Matter

The previous chapters have provided a general introduction to all those fundamental practices that every business company has to apply in order to enter and stay competitive in the business market. One of the keys for success is to understand your customers and be able to satisfy their *wants*: in order to do so, companies can rely on neuromarketing practices.

It is wrong to consider making profit as one of the main goals of companies, for sure being profitable is fundamental to keep running the business but it is not the unique objective. It should be enough to consider the shift from transactional to relationship marketing previously explained in chapter I, to understand that it is no longer the case.

All along this chapter, the business environment will be seen from a different point of view: the one of *Fair Trade Enterprises*.

3.1 Sustainability Issues

During the last decades more than ever, environmental and social issues have been the most discussed topics among people all around the world, especially in developed countries.

The increasing attention on climate change calls for the adoption of more sustainable practices in order to resize and solve this worldwide problem. The key concept of *Sustainability* can be defined as (Investopedia, 2021) “the ability to maintain or support a process continuously over time. In business and policy contexts, sustainability seeks to prevent the depletion of natural or physical resources, so that they will remain available for the long term”. The general idea behind this approach, especially from a business point of view, consists of (Investopedia, 2021) searching for alternative and less invasive production methods to respect the Planet which is, together with People and Profit, one of the three main pillars on which this concept is constructed. As it has already been said, the Profit pillar which considers the economic side of the matter is fundamental to allow companies to gain liquidity to be reinvested on new technologies in order to keep running the business, this reinvestment goes in favor of the other two pillars as well being them concerned about social and environmental matters. This mechanism reflects (World Fair Trade Organization , 2018) the priorities of *Fair Trade Enterprises* focusing on people and the Planet *before* profit. For too many years companies have prioritized making profit drawbaking both people and Planet, leading to a condition of poverty epidemic which still lasts. In developed countries, where poverty concept

stands, but it is not as widespread nor persistent as it is in third world ones, and where people are constantly bombarded with green washing practices, the general perception is the one of a current system that works without drawbacking anyone or anything. Despite the growing attention on the above mentioned matters, not all the companies have interests (World Fair Trade Organization , 2018) in acting fairly in order to solve, or at least resize, the epidemic poverty of third world countries and avoid environmental destruction. The concept of *Economic Sustainability* has not been introduced during the last decade, instead it has been seriously taken into consideration in 1983 (Investopedia, 2021) when the World Commission on Environment and Development was created by the United Nations. Back in 1983 social and environmental concerns existed (World Fair Trade Organization , 2018), the situation was way better than the current one but the awareness and the measures adopted have not been sufficient to face the problems: Economic growth has been the priority for many countries. In recent years the above mentioned concerns have been strongly prioritized again and, in 2015 the United Nations have established *17 Sustainable Development Goals* (SDGs) to be reached by 2030 (Figure 3.1).



Figure 3.1 - *Sustainable Development Goals* (United Nations, 2015)

The upper figure provides a general overview of these *Goals* which are considered as (UNICEF Georgia, 2018) a universal call to action in order to grant a better life for everyone. The first five goals focus on ensuring people to feel equal, be safe and happy, eliminating poverty and granting social education and equal rights to every citizen of the world. The following seven goals have been settled to secure the well-being of both people and Planet focusing on accessible drinking water for everyone, renewable energy and securing fair job

positions. Last but not least, the five remaining goals focus on the care for the environment enhancing sustainable production practices, oceans, seas and Earth's ecosystem protection. The achievement of all these goals (UNICEF Georgia, 2018) is meant to ensure peace and justice all over the world.

Unfortunately, this accomplishment is far from being achieved (TED, 2018), even though many countries are trying hard, governments are setting new laws and many companies have set their own sustainable goals; it seems not to be enough. Many progresses have been made and until 2030 there is still room for improvement (TED, 2018), some progresses can be actually accelerated with a better focus and utilization of current resources.

As it has been analyzed previously, the lack in the current system is the prioritization of non-fair working practices over more sustainable ones, to get profits which are almost fully retained by those self-centered companies which have no interests or willingness to properly reward their workers. Not to deteriorate the situation even more, a new sustainable, functional and fair trade economic model has to be adopted and luckily it already exists (World Fair Trade Organization, 2018), there is no need to build it from scratch, it has just to be embraced.

3.2 Fair Trade and WFTO

The economic model adopted by the *Fair Trade Enterprises* can help the current situation in getting better, but what are those enterprises and what do they do remarkably different with respect to the ones adopting a traditional economic model? These enterprises can be defined as (WFTO, 2022) “a global community of social enterprises that fully practices Fair Trade [...] they put people and planet first in everything they do”.

Before making a deeper and detailed analysis of what exactly this community does, where it acts and more, it is important to give a clear definition of the concept on which this new economic model has been constructed: *Fair Trade*. According to the globally recognised definition (WFTO, 2022) it is “a trading partnership, based on dialogue, transparency and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalized producers and workers – especially in the South”. This community of enterprises is also known as the *World Fair Trade Organization* (WFTO), it has created a unique and international system in order to evaluate and grant social enterprises compliance with the *10 Principles of Fair Trade* all along their production and distribution chains. According to the Principles (WFTO, 2022), the top priority of these companies must be on their workers: farmers and artisans.

The WFTO foundation dates back to 1989 (WFTO, 2022) but it seems that the first forms of this model appeared in the United States during the 40s with the trading of needlework from Puerto Rico and the first officially recognized Fair Trade shop opened in 1958. In Europe the first forms of these practices appeared during the 50s with the foundation of Fair Trade Enterprises in the UK and Fair Trade Original in the Netherlands. During the following years many other corresponding movements were founded by NGOs willing to trade products from the Southern to the Northern parts of the world adopting a solidarity trade perspective (WFTO, 2022); indeed those former countries were considered politically and economically marginalized. The 70s and 80s have been crucial for WFTO official foundation, during those years the social enterprises started firstly to meet informally in order to define some common goals and guidelines but with a growing willingness to be one unique global movement. In 1989 the Netherlands became the homeland of the foundation of the World Fair Trade Organization (WFTO, 2022), which once was known as the International Federation of Alternative Trade (IFAT). Networking practices are at the basis of this new system which encourages members' cooperation at every stage of the process.

At the beginning Fair Trade products were sold in Fair Trade specific shops which were globally known as World Shops (WFTO, 2022), thanks to the unification and the influence of NGOs willing to participate in the selling process, the concept of *labels* was introduced. As a result, many non-profit Fair Trade labeling organizations appeared and in 1997 they all unified under one big association called Fairtrade Labeling International (FLO) which today still lasts but it is simply known as Fairtrade International. The aim of this organization is to verify that social companies are complying with Fairtrade standards (WFTO, 2022) in order to certify their products as Fair Traded with the labeling. In addition to this, another system of verification has been introduced by WFTO to monitor its enterprises. This system has been updated several times during the years until 2013 (WFTO, 2022) when the Guarantee System (GS), which is the currently applied framework, was approved. The fundamental difference between the FLO and the GS stands on the fact that the former can be defined as a product certification system whilst, the latter functions as a granting mechanism of Fair Trade practices to be properly applied and respected all along the supply chain of the evaluated enterprise. The GS main objective is to ensure the system credibility and its validation has been built upon five pillars (WFTO, 2022) involving an improved membership application procedure, audit monitoring, self assessment, the Fair Trade Accountability Watch - which is an online platform allowing everyone to report any WFTO Standard violation - and peer visit. The aim of the pillars is to grant a complete and robust evaluation on the attitude of the

enterprise toward people and Planet, the parameters of this verification are Fair Trade Principles which are shown in Figure 3.2. The last updates of these Principles dates back to 2017 (WFTO, 2022) when some adjustments have been made by WFTO to better achieve SDGs settled in 2015, indeed it is possible to notice the complementarity (Trade Aid, 2017) which stands among these principles and goals. The first principle fights against producer’s poverty ensuring self-sufficiency, whilst the second one aims to have every party aware about what happens at every stage of the supply chain. Principle three encourages long-term trading relationships which will bring to a positive growth of Fair Trade practices (Trade Aid, 2017), promoting and protecting the cultural tradition and identity of producers through fair prices and wages, which are the object of principle four. Principles five and six focus on workers forbidding child labour and granting an equal treatment for everyone, especially for women. Seventh and eighth principles grant not only a safe working environment but a stimulating one, where employees can improve their skills and capabilities. The last two principles (Trade Aid, 2017) are about the promotion of Fair Trade practices in order to enlarge the community, and advocates the adoption of safe practices to protect and preserve the environment.



Figure 3.2 - The 10 Principles of Fair Trade (WFTO, 2022)

To conclude, (WFTO, 2022) the GS focuses on enterprises and, together with the 10 Principles and the International Labor Organization (ILO), sets the WFTO Fair Trade Standards. Once the enterprise has demonstrated full compliance with those Standards it obtains an additional label, other than the FLO one, to be included on their product packaging. Is it important to highlight the fact that this evaluation is not definitive nor static, enterprises are continuously monitored and asked to keep improving and perfecting their practices to be always in compliance with WFTO Standards (WFTO, 2022) which are periodically reviewed and updated. The WFTO approach is really heading to a better world for everyone and, in partnership with Fairtrade International and global Fair Trade advocates, a Fair Trade Charter

has been created (World Fair Trade Organization, 2018) in order to highlight the fundamental principles on which this Movement is built and grant an international and unique point of reference. The Charter allows an overall vision of the main objectives and values involved in every single process of this Global Movement (WFTO, 2022) starting from the economic opportunity as Fair Trade aims at supporting every contributor, starting from the very bottom of the supply chain. Workers and farmers are responsible for production and harvest (WFTO, 2018) and Fair Trade Enterprises grant them a productive and safe working environment. Once the product is ready to be traded, these enterprises bring it to market ensuring a fair pricing to protect both workers and farmers from predatory economic practices. Retailers and consumers are aware of the implication of the Fair Trade process and buy those products knowing that the resulting profits will be distributed among workers and farmers, as well as reinvested in sustainable practices for those workers and farmers communities. None in this process is left behind and everyone benefits from it (WFTO, 2018), livelihood and environment are sustained, raising the chances to meet SDGs. Figure 3.3 summarizes all these key aspects to be taken into account for a Fairtrade Future where an inclusive economic growth is embraced (WFTO, 2018), granting a sustainable livelihood idea which includes all the SDGs.



Figure 3.3 - *International Fair Trade Charter summary* (WFTO, 2018)

3.2.1 UCIRI and Fair Trade Coffee Industry

The first forms of Fair Traded products were mainly handcraft ones (WFTO, 2022), indeed it has been the case for several years probably because they could be traded easily along the existing channels with respect to other products. The Fair Trade Enterprises used to buy those handmade products in order to sell them in their World Shops, the amount of product traded was huge giving to women living in developing countries higher chances for employment

opportunities. Nevertheless, in 1973 (WFTO, 2022) Fair Trade Enterprises in the Netherlands traded the first food product: coffee from Guatemala. This new kind of trade has been a fundamental achievement for the sector introducing a new market segment involving supermarkets, institutional markets and bio shops. Moreover, many Enterprises were encouraged to expand their trade range toward other food products such as sugar and cocoa. This action taken by the Netherlands soon spread all over Europe where Fair Trade Coffee became a trend (WFTO, 2022), the awareness about Fair Trade increased even more and many new Enterprises were founded. Today Fair Trade Coffee is still one of the most fair traded products all over the world and one of the flagship products (WFTO, 2022) of the Fair Trade Movement. Despite its late introduction, why and how did this product gain so much relevance? As it has already been said, the first forms of fair traded actions arose in Latin America (WFTO, 2022) where the most exploited and worst paid sector was the coffee one. At the very beginning it was not possible for Fair Trade Enterprises to trade that product but they were aware of the situation (CLAC - Comercio Justo Fairtrade, 2018) and when the trade became possible, the first action was taken right there, with a subsequent focus on Mexico. Istmo de Tehuantepec (Oaxaca) is to be considered the area of major interest when speaking about coffee production as it is the main economic activity of many families which have been exploited by intermediaries (commonly known as coyotes) for many years. The *coyotes* had decisional power (CLAC - Comercio Justo Fairtrade, 2018) on the sale rate and the price of coffee convicting workers to marginalization and poverty as a result. During those years many missionaries traveled all along Latin America, they have been one of the first contacts of Fair Trade Enterprises (WFTO, 2022) and it is precisely thanks to their intervention and disclosure of information that the above-mentioned exploited workers realized that they could have had the power to improve their situation. In 1981 (CLAC - Comercio Justo Fairtrade, 2018), some missionaries, together with some local workers, made a detailed analysis about the effective production cost of a kilo of coffee: workers were finally able to understand the real value of their production and how much they have been exploited. Indeed, the cost of production for a kilo of coffee was estimated to be 92 pesos (around 4.5 euros), the wage perceived by those workers from the coyotes was 37 pesos (not even 2 euros) and the value of the coffee in the market was 137 pesos (around 6.40 euros): the high degree of exploitation (CLAC - Comercio Justo Fairtrade, 2018) became pretty clear. In order to solve this big problem, seven villages of the area decided to unify under one community and to look for a direct way to export their coffee (CLAC - Comercio Justo Fairtrade, 2018); at the very beginning it was hard, even the Government was against this movement and it took almost six month to have the first coffee

export. The wage obtained from this first direct selling was 130 pesos (around 6 euros), it was considered a big success and encouraged a rapid growth of the community which arrived to include more than 40 villages: in 1983 was founded UCIRI (Unión de Comunidades Indígenas de la Región del Istmo R.I.), the oldest Mexican coffee organization (CLAC - Comercio Justo Fairtrade, 2018) granting sustainable development and improvement in coffee growers' working conditions. During the following years UCIRI entered into contact with some European organizations part of the Alternative Market, which had high interests in buying their coffee. In 1989 five UCIRI representatives went to the Netherlands (CLAC - Comercio Justo Fairtrade, 2018) to discuss, together with other NOGs, the small producers' issues, mainly the indigenous' ones, especially when speaking about coffee but not only; the result of this meeting has been the official foundation of WFTO. The organization has worked for several years on the inclusion and implementation of sustainable and fair trade coffee production practices all over Mexico (Altromercato, 2022b) becoming an official and certified WFTO member in 2018.

3.3 Altromercato

As it has been reported, the Fair Trade Coffee boom brought an increase in awareness about the Fair Trade Movement which grew and spread even faster all over the world, raising the interest of many people. Indeed in 1988 (Altromercato, 2022a), three students from the University of Innsbruck, founded Altromercato with the aim to spread the Fair Trade philosophy in Italy, starting giving their support to a recently founded mexican coffee organization: UCIRI. A decade after its foundation the company had developed a network involving more than 50 partners allowing the products to access the large distribution and in specialized shops. During the following years Altromercato grew even more, at the beginning of 2000s it was possible to count up to 150 members between partners and producers. This significant growth brought in 2004 (Altromercato, 2022a) to the foundation of CTM Agrofair, which still exists today, responsible for fresh fruits supplies. During the last decade (Altromercato, 2022a) many social projects have been created by the company, such as 'Domestic Fair Trade - Solidale Italiano' in 2012, 'Made in Dignity' in 2016 and 'GOODs' in 2021. The last project has been a big success for the company which managed to create a logistic hub to centralize warehouses and products distribution, becoming an important point of reference for the Italian Fair Trade from both an economic and a cultural point of view. Today, Altromercato is considered the most important Fair Trade organization in Italy (Altromercato, 2022a), and the second one worldwide; it counts 87 partners, 225 shops and it

operates in association with 140 organizations, working with more than 450 thousand artisans and farmers spread in 40 countries. Since the beginning the company has fully embraced the Fair Trade mission putting Planet and people’s well-being before profit (Altromercato, 2022a) and fighting for the adoption of alternative and more sustainable production methods in order to defeat injustices and exploitation. “Altromercato *is* as the market should be” (Altromercato, 2022a) and its intention is not the one of changing the traditional market but to *reverse* it.

The 10 Principles of WFTO are seen by this company as the major guideline for every action to be taken (Altromercato, 2022a) and Altromercato has chosen to mark its products with WFTO label which grants their products to be 100% Fair Traded within fully integrated Fair Trade Enterprises whose processes satisfy WFTO Guarantee System. For this social company, sustainability is an intention that has to be translated into social, environmental and economic actions to create a social industry with a high social impact and a low environmental one. The willingness of Altromercato to go beyond can be proven not only by its compliance with WFTO Standards but also with the ones of other institutions such as WFTO Europe, Equo Garantito and EFTA (Altromercato company profile pdf, 2022) which, after all the verification needed, have allowed the company to use their labels as well (Figure 3.4).



Figure 3.4 - Altromercato Fairtrade labels (Altromercato company profile pdf, 2022)

Altromercato is, first of all, a food company and it focuses its efforts into the Fair Trade production of coffee, cocoa, sugar, tomato and bananas. In addition to this, it has decided not to limit its attention to food sector concerns but expand toward other market sectors: if the mission is to *overturn* the traditional market (Altromercato, 2022a) it is necessary to act from many sides. To better comply with this purpose, the company has decided to invest in fair trade production fields of natural cosmetics, fashion and domestic tools, applying a brand extension as well in order to better clarify its intention.

Even though it is not the first sector which comes to one's mind when thinking about labor exploitation and pollution, the cosmetic sector needs to be encouraged to embrace a Fair Trade model as well. Altromercato with its cosmetic line branded *Natyr* (Altromercato, 2022a) promotes cosmetics which are: fair, natural and made in Italy. The ingredients needed for this cosmetics production are extracted from more than 50 different types of fair traded raw materials which are obtained working in partnership with more than 2000 small manufacturers from 25 different countries. Every product is nickel tested, without silicones or parabens, and at least 98% (Altromercato, 2022a) of its ingredients are plant based; moreover, *Natyr* product line has some *bio* products as well which are certified and labeled Natrue.

For what concerns fashion and domestic products instead, Altromercato has created *On Earth* which is a Cooperative Collection of ethical fashion (Altromercato, 2022a) which gathers together many Italian industries specialized on the production of sustainable clothing respecting artisans from the Southern parts of the Worlds and the planet. The final goal of the project *On Earth* is to generate value for every actor involved in the sector (Altromercato, 2022a); it acts in conformity with Fair Trade rules and objective supporting the promotion of safe and non exploiting working environments and protection and preservation of rural areas. The idea behind this ethical fashion is to follow the natural life cycle of Nature instead of the market flow, in order to provide evergreen clothing lines which won't be wasted at the end of the season. The willingness of expanding fair trade practices to sectors other than the food one, doesn't stop to the clothing industry, Altromercato has introduced a second branch of the *On Earth* project about ethical home with the aim of providing handmade and unique objects. This product line is more specific and seeks the collaboration between Italian and third world countries artisans (Altromercato, 2022a) in order to produce unique pieces adopting the traditional techniques of the villages in which they are created and bringing with them their artisans' story and culture. Last but not least, the above mentioned project has a big commitment in the area of circular economy with its *upcycling* initiative (Altromercato, 2022a) where remaining inventories and the unsold are converted in raw materials for the creation of new products. The aim of this project is not to lose the intrinsic value of the product and, in the meantime, to augment it by renewing its design and colors with the help of professional artisans' fine craftsmanship. In this way it would be possible (Altromercato, 2022a) not only to avoid wastes and the production of new raw materials, but also to create new working opportunities for the industries of the third world countries.

The coffee industry has been the first commitment of Altromercato (Altromercato, 2022a), it is a sector in which fair trade practices are really needed to resize labor exploitation issues but

also to restore and preserve environmental biodiversity. During the last years, the coffee production has been compromised by climate change which has brought to light new parasites and aggressive illnesses (Altromercato, 2021), causing an ecological imbalance and bringing severe consequences for plants growth. Small producers are having hard times in facing this climatic crisis (Altromercato, 2021) and its consequences because they do not have means nor knowledge to adapt; as a result the availability of coffee decreases and its price increases. Without a proper intervention focused on the preservation of the territory and a decrease in emissions, forecasting states that by 2050 (Altromercato, 2021) the world's coffee production will be reduced up to 50% with a complete potential extinction of wild coffee by 2080. Moreover, it is important to take into account the fact that more than 80% of coffee is produced by 20 million small producers (Altromercato, 2021), thus the livelihood of more than 120 million people all over the world relies on it and without any fair trade practice only 10% of its value is retained by these small producers. In order to improve the situation and grant a better future for both people and planet, Altromercato follows Fair Trade Movement rules granting a good quality coffee which is collected and produced fairly providing a coffee which is (Altromercato, 2021) “not bitter for whoever works it”. Coffee beans are collected in several rounds in order to respect plants' natural maturation process and are grown with traditional methods in order to preserve ground, its biodiversity and water resources. It is possible to define this kind of industry as a lower environmental impacting one (Altromercato, 2021) indeed, even the packaging of this fair trade coffee wants to be less impactful as possible: it is completely recyclable. If the environmental impact is low the social one is very high, granting transparent and long term relationships with producers, fair wages, safe working environment and product traceability. Moreover, not to damage even more the ground and to foster a decrease in emission, a big majority of produced coffee is the result of biological farming (Altromercato, 2021). The company’s fair trade coffee comes from countries such as Nicaragua, Mexico, Guatemala, Basil, Perù, Ethiopia and India.

3.3.1 Meru Herbs

In 2006 the authors Leonardo Becchetti and Marco Costantino published a book about the Fair Trade Movement adopting a different perspective. With respect to all the other books published before, they have integrated an economic analysis on the topic as well, in order to demonstrate whether the fair trade movement has an impact, being it positive or negative, on the environments in which it operates considering wellness indicators. The analysis has been

based on Meru Herbs: one of the oldest organizations partnering with Altromercato, which was already worldwide known as one of the biggest importers for the fair trade channel.

The history of Meru Herbs dates back to the 60s (Becchetti and Costantino, 2006) when a group of 430 families established on some plots of land allocated by the Kenyan government in Meru Central and Tharaka districts, situated at the bases of Mount Kenya. The area has been classified as semi-arid with a yearly rainfall estimated to be around 550-650 mm and concentrated in four months, thus agricultural practices were possible with drought resistant farming such as sorghum and millet. In 1982 (Becchetti and Costantino, 2006) the Ng'uuru Gakirwe Water Committee, an association created by local farmers, started the Ng'uuru Gakirwe Water project in order to bring water to every house and every field of the area through the exploitation of Kitheno river channeling. The first phase of the project was completed in 1990 when up to 142 families had been supplied with irrigation water. The second phase has been splitted up into two parts, in 1994 this first part was completed: 163 families were able to access irrigation water. Only in 2000 this second phase was completed, together with the third one, adding 174 families to the irrigation water system. The daily quantity of water provided by this system has been enough to grant the intensive farming of at least one acres of land to each family. As a result, (Becchetti and Costantino, 2006) time and work spent for water supply have drastically decreased whilst, self-consumption production and income have increased. During these years of renovation, in 1991 Meru Herbs was founded (Becchetti and Costantino, 2006) in order to generate revenues to cover the costs of the above mentioned project and to help local farmers to face financial impositions. The product commercialization of that area was linked to Nairobi's traders responsible for product collection and exportation. This kind of commercial environment was subjected to uncertain variables (Becchetti and Costantino, 2006) such as the viability of the area or market demand, and it was not a guarantee for Meru Herbs to develop those long lasting relationships fundamental in order to have a constant flow of revenues to cover the costs. It is exactly from this condition of general uncertainty that, in the same year, the partnership with Altromercato began, it grew stronger during the years and today still stands.

The results of the analysis conducted by Becchetti and Costantino (2006) on Meru Herbs thus, on the impact of the Fair Trade Movement, reports mainly a positive impact on people's wellness. It seems that partnering with fair trade organizations such as Altromercato, brings an increase in capabilities, economic and social wealth leaving still room for improvement in human capital. In this case, fair trade practices are responsible for an increase in product diversification, the creation of new commercial channels and the spread of fair prices and

wages. Moreover, it seems that all those families affiliated to Fair Trade and Meru Herbs have a better quality of life (Becchetti and Costantino, 2006), especially thanks to the fair wages earned. These revenues allow farmers to make higher investments for food consumption, they can buy more food and of better quality lowering the percentage of malnourishment cases.

This data collection (Becchetti and Costantino, 2006) suggests that fair trade practices have a direct and positive impact on farmers' wellbeing but not only from a monetary perspective. In the areas where fair trade is applied the internal level of democracy is higher as well as the degree of environmental protection and preservation, relationships are based on transparency, working areas are safe and the local culture is respected.

All along this chapter it has been possible to better understand and analyze Fair Trade Matter in all its forms, from the beginning until today; the importance and the concrete positive impact of these practices have been proven. Altromercato has been the first Italian fair trade company and during the years it has grown and expanded. Not every company, especially the multinational ones, is interested in adopting fair trade practices and unfortunately the mass distribution is mainly covered by non-fair trade products. Supermarkets have shelves full of these products and the percentage of the fair traded ones is very low, the majority of them are sold in specific shops only, where customers are already initiated to the Movement. Altromercato is willing to distribute its product in supermarkets as well, in order to do so it is investing a lot in renewing its image to better attract and communicate with new potential customers. In the next chapter, the results of a neuromarketing experiment, which has been recently conducted on Altromercato's new coffee packaging, will be reported and analyzed.

Chapter 4

Neuromarketing Experiment

In the previous chapters several topics have been introduced in order to allow a full and complete understanding of the neuromarketing experiment which has been conducted for this thesis on Altromercato's coffee packages. In the first chapter a general introduction to some of Brand Management's fundamentals has been made to better individuate the main elements of the brand's identity and the possible necessity to renew them in order to be correctly perceived in the brand's image; the second chapter presented a specific focus on Neuroscience and Neuromarketing which will help the practical understanding of the experiment; and the third one introduced the company which will be analyzed, its purpose and its mission. The aim of this last chapter is to focus on the Neuromarketing experiment conducted, providing an explanation of the process and an interpretation of the results to better estimate the effectiveness of Altromercato coffee packaging's renewal.

4.1 Aim of the experiment

As Franceschini (2021) reports, Altromercato is the most important Fair Trade Company in Italy and the second worldwide, it is willing to make the difference and spread even more its products and, in order to do so, its image and communication plans have been renewed.

Fair Trade products have a higher price with respect to the ordinary ones, and even though nowadays people are generally aware of sustainability problems and green washing practices (Franceschini, 2021), not all of them are willing to pay a *fair price*. Those people are not used to Fair Trade products because they are mostly sold in specific shops. It is possible to find some fair trade products in supermarkets as well, but they do not have a big consumer response. Potential consumers do not distinguish a fair product from one of the mass market, and – as a consequence of that – the former is perceived as unduly expensive.

Sinek (2009), already mentioned in Chapter 1, has highlighted the importance for a company to be aware of its *purpose* in order to be able to practice effective inside-out communication. Altromercato knows very well its purpose and its new payoff "*Consumi o scegli?*" (Franceschini, 2021) is very representative: it is a call to action for consumers. The renovation of this social company cannot stop to its claim: it is important to have an internal coherence among all the elements of *the Corporate Brand Identity Matrix* (Figure 1.5) in order ascend *Aaker's awareness pyramid* (Figure 1.7) aiming to be a top of mind brand. Altromercato is

also planning to expand the availability of its products to supermarkets, and new packages have been designed also for this reason: the old ones would have not been able to stand against the vast competition which mass market implies.

Behavioral Science and Neuromarketing analysis have demonstrated (Diotto, 2020) that quite every sense plays an important role during the decision-making process, especially the sight. It appears that (Kahneman, 2011) the human subconscious takes between three and seven seconds to decide what to buy after a glimpse on the shelves, that is why packaging is so important, and Altromercato is well aware of that. These new packages have been designed following the updated guidelines requiring information on the quality of the product, its fair production and its origin to be visible and the brand recognizable.

The experiment will be conducted on six different kinds of packaging, two for each of the three types of coffee they sell, and the main goal will be to understand which are the most effective options and what they really communicate to some potential customers.

4.2 Before the experiment

The experiment on Altromercato coffee packages was conducted on 27th and 28th June 2022, in partnership with NeurExplore, an Italian Neuromarketing company. Coffee packages have been chosen for this experiment because Altromercato had already created some new possible designs and had to decide which one among all would have been the best option to be launched. The first thing to do when running an experiment is to choose which stimuli to analyze: a stimulus can be an image or a video or whatever element scientists are willing to test. In this case the stimuli were the images of the packages created by Altromercato therefore, from now on the words stimulus and image will be used interchangeably.

The coffee lines involved in the experiment were three: Biocaffè, Miscela and Monorigine. All the possible options have been analyzed by NeurExplore and six of them have been chosen with the following criteria: two different packagings for each coffee line, being one the best option for Altromercato and the other the best option for NeurExplore. After this selection it is important to highlight some areas of interest for the stimuli, thus deciding what to test, and create at least two different surveys, made with Google Form: one which will be the same for each different stimulus and another one, more general, to be fulfilled at the end of the experiment. It is also important to decide on which target to test the stimuli, in this case every person drinking coffee regularly with an age between 25 and 55 years. This choice has been made considering that people in this range, no matter their gender, are usually willing to try different products even though they might already have their favorite brand of coffee.

In this way it would be possible to concretely understand what Altromercato products tell to this sample of potential consumers, which packaging is considered the best option to them and their willingness to pay for each of the six products.

Once all these details had been settled, ten days before the experiment date, the recruiting phase started: people from NeurExplore's database, fitting with the above mentioned target criteria, were contacted via email and invited to come to the company's headquarter during specific time slots to take part in the experiment. Once the number of subjects needed for the sample had been reached, the recruiting phase stopped. For this experiment the required sample was of 14 subjects which, in exchange for their availability, have received as compensation a box of Altromercato's products for a value of 25€.

4.3 The day of the experiment

On the selected date each participant took part in the experiment during the selected slot of time. The frequency of the slots had been one per hour, as the estimated length of the experiment was around 45 minutes. The experiment phase took two days in order to test all of the 14 subjects. Experiments have been conducted one at the time in a room with two desks and two computers one in front of the other: a desk and a screen for the tested subject, and the other one with the computer controlling the already mentioned screen, for the testing company. Before the beginning of the experiment every subject has signed a privacy statement and read an informative paper about the experiment procedures. The first step consisted of the visualization of six stimuli each one for 15 seconds during which participants' gaze was measured with the eye-tracker, followed by a survey to be fulfilled after the view of each image and an additional socio-demographic survey to be fulfilled at the very end of the process. The former survey, shown after each stimulus, required the participant to answer the questions reported in Table 4.1. The latter survey required the subject to answer the questions in Table 4.2, at the very end of the experiment.

4.3.1 Eye-tracker and its calibration

In this specific case, the main tool used to conduct the experiment has been the *eye-tracker* (ET). As it has been reported in Chapter 2 this tool measures the tester's visual attention by tracking down his or her eyes' movement (Eyeware, 2022). This particular analysis studies, through the help of an infrared camera (Figure 4.1), the projection of infrared light on the pupils. In this way it has been possible to track down the path of participants' eyes when

looking at the packaging and isolate their areas of interests to better understand which elements have mainly captured their attention.



Figure 4.1 - *ET infrared camera* (Gazepoint, 2020)

The ET requires a proper calibration in order to have an optimal eye-tracking. This calibration has to be done before the transmission of each stimulus. The tester must sit in front of the computer and look at a small white cross at the center of the black screen. This cross will then disappear and reappear randomly all over the screen for 9 times, and the tester must keep following it. Once this phase has been completed, on the black screen several circles with a cross inside appear (Figure 4.2) and the subject is required to look at a specific cross.

In Figure 4.2 it is possible to see a green line with the two dots at its extremes, corresponding to the tester's gaze. In order to have precise and accurate eye-tracking it is important for this green line to be inside the circle, as near to the cross as possible. To better test the responsiveness of the tracker to relevant changes of the eyes' direction and ensure accuracy all along the experiment, the subject is usually asked to look at the crosses at the extreme of the screen and then at the center of it.

Once the calibration is completed, the experiment can start.



Figure 4.2 - *ET calibration* (Antunes and Santana, 2018)

4.3.2 Surveys

In this case, the stimuli to be shown were six and, as it has been already said, after each of them, the participant was required to answer the questions of the first survey (Table 4.1) reported below. Subjects have fulfilled this questionnaire six times.

1	What was the first thing which came to your mind when you saw the package?
2	Which adjective would you use in order to describe the package that you have seen?
3	Which were the elements that you have liked more of the package that you have seen?
4	Which were the elements that you have liked less of the package that you have seen?
5	How have you felt after having seen the package? Indifferent - Happy- Sad - Bored - Amused - Anxious - Calm - Despised - Curious - Angry - Hopeful - Scared
6	Justify your answer
7	Scoring from 1 to 5, 1 = not at all and 5 = a lot, how much do you think it is likely that this package contains a...? <ul style="list-style-type: none"> - quality product - biological product - refined product - traditional product - product that you expect to find in supermarkets - product created in a sustainable way from and environmental point of view
8	How much are you willing to pay for this product? Report the amount in euros.
9	What do you remember the most of the packaging that you have seen?

Table 4.1 - *After Stimulus Survey*

It is important to highlight the fact that, in order to reduce the margin of error and any potential bias linked to the consequentality of reproduction among stimuli, five different pseudo-randomly reproduction subcategories have been created: no more than two subjects have seen the stimuli in the same order.

These five subcategories were:

- 1) A-B-C-D-E-F
- 2) C-E-F-A-D-B
- 3) B-C-A-E-D-F
- 4) F-E-C-B-A-D
- 5) E-A-B-F-C-D

At the very end of each experiment the survey on Table 4.2 was fulfilled by participants in order to get complementary information for the purposes of this research.

1	Among all the coffee packages that you have seen, which one is your favorite?
2	Justify your answer.
3	Do you recall the brand on the packages that you have seen? - Yes - No
4	Justify your answer.
5	Do you think that the industry safeguards its workers granting a safe and controlled working environment?
6	Justify your answer.
7	Report your age
8	Report your city/country of origin.
9	Your gender is... - M - F - Other
10	Do you live... - alone - with your family
11	Are you in charge of the weekly groceries supply? - Yes - No

Table 4.2 - *Socio-demographic Survey*

These surveys are self-report techniques which nowadays are used as a complement to other neuromarketing tools, in order to grant a more accurate analysis.

4.3.3 Stimuli presentation

Figure 4.3 will report the six stimuli which have been chosen to run this experiment, they have been renamed with letters from A to F in order not to let the tester understand which package was the one chosen by Altromercato (the first in each couple, so A, C and E) and the one chosen by NeurExplore (the second in each couple, so B, D and F).



Figure 4.3 - Tested coffee packages (PDF NeurExplore Presentation)

As it has been already mentioned, after the ET calibration the stimuli in Figure 4.3 have been shown one at a time for 15 seconds to each participant, and after each one a survey has been fulfilled. Once the sixth stimulus had been shown and its survey completed, the subjects were asked to fulfill the second survey as well. At the end of every experiment each participant was thanked again and provided with the compensation.

4.4 Data Analysis

Questionnaires have been made on Google Forms and all the answers have been automatically reported on Excel sheets, one for every stimulus. A semantic analysis has been applied to those data, answers have been regrouped into subsets called *synsets* – which are actually lexical synonymous sets useful to better classify the expressed concepts.

Not all the answers have been classified with the same technique, a more accurate explanation about the application of semantic analysis will be reported on Appendix A.

Answers to the first question ‘*What was the first thing which came to your mind when you saw the package?*’ (Table 4.1) have been divided into three subcategories: positive, negative and neutral. In this way it has been possible to obtain the Priming (Kahneman, 2011) of each stimulus, that is the first impression one has toward a stimulus, influencing the total understanding and perception.

In Table 4.3 primings for each stimulus are reported:

Priming	Positive	Negative	Neutral
A	57.14%	21.43%	21.43%
B	57.14%	14.29%	28.57%
C	35.71%	0%	64.29%
D	78.57%	7.14%	14.29%
E	42.86%	14.29%	42.86%
F	71.43%	28.57%	0%

Table 4.3 - Priming data

As it is possible to notice from the data, D and F are the stimuli with a higher level of positive priming , thus it is appropriate to consider them the participants’ best options.

Answers to the second question ‘*Which adjective would you use in order to describe the package that you have seen?*’ (Table 4.1) have been regrouped as those of Question 1 and results are shown in Table 4.4. According to those data, stimulus C is the one with the best positive association in terms of adjectives. Moreover, it is relevant to notice that stimulus D has the same percentage distribution of its Priming values (Table 4.3).

Adjectives	Positive	Negative	Neutral
A	71.43%	28.57%	0%
B	78.57%	21.43%	0%
C	92.86%	7.14%	0%
D	78.57%	7.14%	14.29%
E	71.43%	28.57%	0%
F	71.43%	21.43%	7.14%

Table 4.4 - *Adjectives data*

Emotions of Question 5 of Table 4.1 have been classified under the same subcategories as well (Table 4.5) and stimulus D reports the best impact in terms of emotions triggering, followed by stimuli A and E which have the same percentage distribution among the three subcategories.

Emotions	Positive	Negative	Neutre
A	64.29%	28.57%	7.14%
B	50%	28.57%	21.43%
C	50%	21.43%	28.57%
D	78.57%	14.29%	7.14%
E	64.29%	28.57%	7.14%
F	57.14%	28.57%	14.29%

Table 4.5 - *Emotions data*

Question 8 (Table 4.1) asked participants the prices they would have been willing to pay for each stimulus, with an amount expressed in euros. In Table 4.6 the averages of these amounts,

which have been calculated for each packaging, are reported. It is possible to notice that participants would pay different prices for the same product according to the packaging they see. For the Biocaffè product line, package A is the one for which they would pay more; for what concerns Miscela and Monorigine lines, the packages triggering a higher willingness to pay would be D and E.

Stimuli	Willingness to pay
A	3.73€
B	3.46€
C	3.23€
D	3.45€
E	4.01€
F	3.89€

Table 4.6 - *Willingness to pay*

Averages have been calculated as well for the answers to Question 7 (Table 4.1), in order to be able to make comparisons among unique values. The rating for this question was from 1 to 5, and the averages – which have been calculated for each of the six categories – are reported in Figure 4.4 below. The average total rating on the six dimensions evaluated for each stimulus follows: for Biocaffè packages the averages are 3.52 for pack A and 3.12 for pack B; for Miscela ones, package C has an average score among categories equal to 3.37, while package D scores 3.48; and lastly, the overall averages calculated for the Monorigine packagings are, respectively, 3.47 for pack E and 3.62 for pack F.

Accordingly, a green highlight has been added to some columns in Figure 4.4, representing the best scoring alternative for each category of product: stimulus A for Biocaffè, stimulus D for Miscela and stimulus F for Monorigine. These stimuli have been selected on the basis of the highest overall averages, calculated making the average of the averages for each stimulus (Figure 4.4). These results have been reported above, and looking at those data it is also possible to say that stimulus F has the highest average, not only for its own line, but among all

the others as well. More in general, it is justified to assume that the packages with the highest overall averages will be participant’s best options.

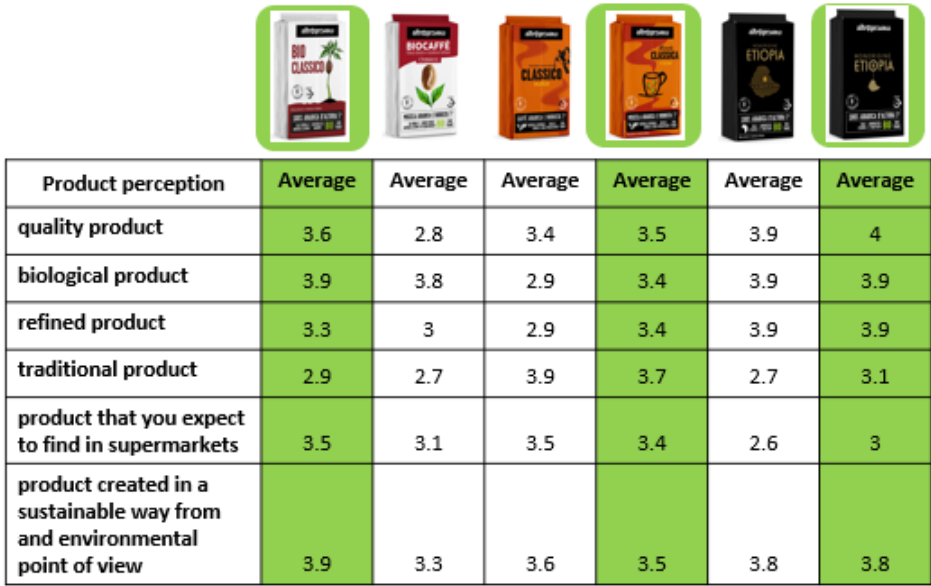


Figure 4.4 - Association to product perception (PDF NeurExplore Presentation)

Answers to Questions 3 and 4 of the first survey (Table 4.1) have been analyzed with a semantic technique, as well as Question 1. The analysis has created many layers of visual preferences which have been mainly divided into “liked” and “not liked” elements. This division will turn out to be useful when running the eye-tracking results’ interpretation. Moreover, this information will give additional support to participant’s choices, because a motivation for their actions is provided: it is not just about *what* they like most or not, it is about *why* they prefer one package with respect to another. This kind of information is the most important a company can gather because, in order to satisfy consumers’ desires, it is necessary to know what drives and stimulates them.

According to data reported until now, we are allowed to say that stimuli D and F are those which have captured participants’ attention the most: this assumption will be better interpreted and analyzed in the following section. Until then, Table 4.7 below will report the data collected from Question 1 of the second survey asking ‘Among all the coffee packages that you have seen, which one is your favorite?’ (Table 4.2). According to these data, stimulus F can find another validation of its success. Indeed, looking at the percentages, it has the highest ratings among all, followed by stimuli D and E, which had reported remarkable scores in the tables of priming, adjectives and emotions as well.

Stimuli	Willingness to buy
F	33.33%
D	22.22%
E	22.22%
A	11.11%
B	5.56%
C	5.56%

Table 4.7 - *Willingness to buy*

Until now results seem to be coherent and consistent. In the following section stimuli will be analyzed two by two according to their coffee line, and deeper interpretations will be provided through the application of the semantic analysis.

4.5 Results and Interpretation

The aims of the experiment were two: the first was to register the subjects' best option for each line of coffee; and the second was to find which pack had been classified as the best option among all. In the previous sections some first insights about the results have been detected, now a more accurate analysis will be conducted in order to understand whether those insights can lead to concrete results. The interpretation of package heat maps will be very relevant to this purpose: indeed, a heat map consists of a 2D graphical representation of data (Hotjar, 2022), which has been obtained for each stimulus through the eye-tracker, where values are translated into colors providing a visual summary of produced data.

4.5.1 Biocaffè

For the coffee line Biocaffè, stimuli A and B have been tested. Stimulus A was Altromercato's best choice, whilst stimulus B was the one of NeurExplore. The two packages have been structured into two different ways: pack A has a completely new design, pack B instead is the upgraded version of the already existing packaging (Figure 4.5).



Figure 4.5 - *Biocaffè stimuli*

In order to understand which packaging will be the participants' best choice, some steps must be taken: firstly, it is important to take into account the percentages which have been obtained for priming, adjectives and emotions tables. As *Priming data* table reports (Table 4.3), both packages have a positive priming equal to 57.14% meaning that more than half of the subjects had the same amount of good feelings for both the packages. Negative and neutral priming instead have different percentages: for pack A they both measure 21.43% whilst for pack B negative priming is 14.29% and the neutral one is 28.57%. For what concerns the *Adjectives data* table (Table 4.4), pack A has a positive associations ratio of 71.43% whilst the one of pack B is slightly higher, 78.57%. Lastly, in *Emotions data* table (Table 4.5), the emotions triggered by the two packages are 64.29% positive for pack A and 50% positive for pack B. According to these data, it seems that from an overall perspective, pack A has received the most positive response.

As it has been possible to see from the questions reported on Table 4.1, participants were also asked to say what they liked and what they did not like about the packages. It appears that for pack A the colors have been largely appreciated, as white and red give the idea of a smooth taste. The image of the coffee bean together with the origin information have been appreciated as well. Moreover, another detail which got subjects' attention was the information about the blend of coffee. On one hand the idea of the image as a whole has been positively perceived, but on the other hand, the positioning of the coffee bean all along the plant stem wasn't truly convincing. In addition to this, the excessive amount of information reported in the black box has not been appreciated, since it has been difficult for participants to read and absorb all the content – thus, it is possible to say that the bottom part of the packaging is too heavy at a glance. As a result, when looking at the heat map of the stimulus it is possible to notice that the distribution is not homogeneous.

More than 6 seconds, over the 15 of total watching time per each stimulus, are spent looking at the bottom black box of this pack, trying to read all the information.

Now for what concerns stimulus B, participants have appreciated quite the same features of pack A, such as colors, the image of the coffee bean and the presence of information about the origin of coffee; in this case it has been also noticed that the product was a fair trade one.

For pack B, the packaging features that participants liked less were the excessive presence of information reported on the box at the bottom of the pack, as for stimulus A, and the representation of coffee bean leaves which have been classified as optically disturbing because of their green gradient. Moreover, it is important to highlight the fact that many subjects have perceived the pack as similar to one of the competitors. This association could explain the percentage distribution of the *Emotions data* table (Table 4.5), where positive emotions are at 50% and the other half is quite equally distributed among negative and neutral emotions. Participants remain indifferent to something that they have already seen or feel negative emotion for something considered as an expensive copy of an already existing product. On the other hand, the stimulus B heat map is definitely better distributed than the previous one: subjects spend a proportionate amount of time looking at the packaging, which in the end does not result too heavy at a glance, being the information box at the bottom of the pack white and not black.

In order to conclude the analysis of this coffee line, there are some other elements to be taken into account, such as subjects' willingness to pay and to buy. As it is possible to see on Table 4.6 (*Willingness to pay*) and Table 4.7 (*Willingness to buy*), pack A has been valued the better one in both the analyses: it is possible to hypothesize that this is due to the negative response generated by the association between pack B and competition's packs.

Last but not least, some other elements to be taken into account are the data about the averages reported on Figure 4.4, which confirm a general preference for pack A.

4.5.2 Miscela

Stimuli C and D have been tested for the coffee line Miscela. The former was Altromercato's best choice, the latter NeurExplore's one. Both packages (Figure 4.6) are different from the existing one and have in common the representation of a trail of coffee scent on the background.



Figure 4.6 - *Miscela stimuli*

As it has been previously done, in order to understand which packaging has been considered the best choice it is important to take into account some elements. Looking at the *Priming data* table (Table 4.3) it is possible to notice the huge gap existing between the positive priming for pack C and the one for pack D. The former has a significantly low positive percentage equal to 35.71%, whilst the latter has a positive priming covering 78.57% of the total. Accordingly, stimulus C is classified as a common pack for moka coffee, while stimulus D is perceived as a traditional coffee packaging. This percentage distribution finds complementarity with data on Table 4.5 (*Emotions data*), where positive emotions for pack C are 50% and those of pack D cover again the 78.57% of the total. Indeed, the perception of stimulus C as a common pack of moka coffee have led tested subjects to indifference, whilst stimulus D has triggered a huge quantity of positive emotions – such as happiness and serendipity. The coffee cup image on stimulus D (Figure 4.6), with coffee beans inside and the trail of scent on the background, correlates with two important images: the idea of the coffee break as a self treat and the joy of family time moments.

As a matter of fact, the image of pack D has been deeply appreciated by participants, as well as the reported information about coffee origin and industry. The pack color, which is the same for both stimuli, is one of the elements which have been valued less in both cases.

For what concerns the appreciated features of pack C, subjects liked the information about the coffee blend, the packaging disposal and the image of the moka. These preferences are confirmed by the heat maps of both stimuli. On one side, pack C heat map is pretty homogeneous, the focus on the information box is well distributed among the 15 seconds of stimulus observation, and the black bottom box gets subjects' attention but without overshadowing all the other information. On the other hand, the pack D heatmap is homogeneous as well, the coffee cup and the information box have captured participants' attention which have mainly spent their watching time moving from the cup to the box and

vice versa, reading all the reported information and analyzing the cup, the coffee beans inside it and the trail of scent. Even though from a communication's effectiveness point of view heat maps are both positive, the percentages about the *willingness to buy* on Table 4.7 report that one of the two packaging has been deeply preferred to the other. Pack D is the best choice, since participants' willingness to buy is 22.22%, way higher than the 5.56% of pack C. Moreover, the *willingness to pay* calculated on Table 4.6 complements this theory, as on average subjects' willingness to pay for pack D is higher than the one for pack C. Once again, taking into account the average calculation made with the averages of every section reported on Figure 4.4, the trend of preferences towards stimulus D is confirmed.

4.5.3 Monorigine

This coffee line has been thought by Altromercato to be the premium one among all. Indeed, the packaging's style and graphics want to communicate this idea: pack E is Altromercato's best choice and pack F is NeurExplore's one.



Figure 4.8 - *Monorigine stimuli*

In order to understand which is actually the best choice and why, it is important to give a glimpse to *Priming data* table (Table 4.3) which reports a positive priming equal to 71.43% for pack F and a positive priming for pack E which doesn't even reach 50%. Stimulus F is perceived as a pack containing fair traded Ethiopian coffee, whilst E is perceived as a pack of African peculiar coffee, meaning that by some participants the coffee was perceived as a quality one, but by others it was not. On the contrary, the percentage of *Emotions data* reported on Table 4.5 attributes to pack E a higher positive reaction with respect to pack F, as the emotion triggered in this case has been curiosity, followed by indifference and happiness. The curiosity was lightened up by the coffee origin, which made watchers think about a deep taste, while indifference was mainly linked to the color of the pack, which was considered

boring, and happiness was due to the fact that the product is a fair trade one. Pack F has triggered the same emotions for the same reasons of stimulus E, but in a different order; in this case the first emotion was indifference, and that's why the positive emotions percentage in Table 4.5 scored lower. As it has been already said, the black color chosen was not one of the most appreciated features of the pack, even though it transmitted the idea of a premium product. For what concerns the other elements, when considering stimulus E the image with fingerprint and information about the origin have been appreciated. Instead, the dimension and font of the word 'Etiopia' have been perceived as too big, and some extra uncertainties in participants' minds have been evoked because not all of them associated this non-Italian origin with quality coffee. Moreover, the excess of information on the bottom of the pack hasn't been particularly valued in this case as well.

When looking at the heat map of stimulus E it is possible to counter check what has been said. Reported data are not homogeneous: the word 'Etiopia' shadows every other information at the beginning of the watching time and, after that, subjects spent more than half of their watching time trying to read the content in the information box.

When analyzing stimulus F, the word 'BIO' written in green, standing out from the black background, has been deeply appreciated, as well as perceived to communicate the origin of the product. The amount of information present at the bottom of the box on stimulus F has been considered excessive as well, but the heat map tells us the contrary, being it better than the other one – as the watching time is better distributed all along the pack. It is possible to think that what has helped this homogeneous visual distribution has been the line connecting vertically the word 'Etiopia', which is written in smaller characters with respect to pack E, and the image of the country – because it drives the observers from the top to the bottom of the pack and vice versa. As a result, the packaging is lighter to the eye and it is perceived as more elegant. In addition to this, the vertical line ending with the image of Ethiopia evokes the idea of a jewel. Accordingly, the *willingness to buy* (Table 4.7) for this stimulus is the highest among all, scoring 33.33%, followed by stimulus E which scores 22.22%. What is very interesting to be noticed is the fact that, despite subjects having a higher willingness to buy for pack F, their willingness to pay is higher for pack E.

However, this doesn't change the overall preference estimated with the averages on Figure 4.4, where pack F keeps standing as the best choice.

4.6 Experiment Conclusions

To sum up, it is possible to say that among Altromercato's best choices (A, C and E) the only one which can be considered as effective is pack A, while the other best options are not those picked by Altromercato. It is important to highlight the fact that this experiment has been conducted on a sample of 14 people only, therefore it would be possible to have different results when testing a bigger sample. It is important to highlight the fact that Altromercato chose its best options according to the results obtained from a survey launched by the company itself to estimate consumers' preferences. The criteria and the tools adopted for this experiment did not imply a neuromarketing approach, which explains why Altromercato's best choices were different from the NeurExplore's ones.

Now some more general observation about the three coffee lines will be made, starting with considering results about the *willingness to buy* reported on Table 4.7. Biocaffè packages are positioned in the second half of the table even though the *willingness to pay* (Table 4.6) for these products is not one of the lowest. For what concerns the Miscela coffee line, despite the willingness to pay for these products is lower with respect to the one of the other two coffee lines, pack D gets the silver medal in terms of willingness to buy. Monorigine coffee line is probably the one which better communicates its value regardless of the packaging alternative chosen, and in fact if percentages of positive primings for each category are summed up, the one with the highest score is Monorigine. This coffee line has both its packages on the podium, and stimulus F is not only the best choice of its category, but also the most preferred one among all the available options, as Figure 4.4 reported above. Even though the dark color of the pack has been a controversial element, it has helped in memorizing the products and enhancing the perception of a coffee of particular quality, and as a result it is the coffee line that registers the highest willingness to pay.

Always taking into account the sum of positive priming per category, the second preferred line is the Miscela one, which is seen as classical and traditional. In this case as well, despite the orange color was not really appreciated, it has helped in memorizing the product, enhancing the willingness to buy for this line and especially the D pack. This case in particular demonstrates the key role that emotions play in consumers' decision making processes, as the associations triggered by the cup of coffee linked to happy familiar moments and self treat has been definitely relevant.

Lastly, the Biocaffè coffee line has the lowest amount when summing up positive primings, but the percentage of positive adjective associations is not the lowest. The coffee is perceived

as traditional, but also biological, and this justifies the willingness to pay for this coffee line, which is higher than the Miscela one.

Conclusions

The main focus of this thesis on Neuromarketing approaches, applied to provide useful insights to Altromercato objectives of aligning its brand identity and perceived brand image in its new coffee packages, has been developed providing both a theoretical and a practical method. The former approach has been provided in Chapter 2, which has defined the fundamentals to understand theoretically how Neuromarketing works and for which purposes it can be applied; on the other hand, the latter approach has been provided in the last chapter. Some assumptions have been made before the experiment started, and others during the first round of data collection which, in the end, have turned out to be true. To conclude, it is possible to say that Neuromarketing allows to detect and understand attitudes generating useful information for the company. For instance, the experiment has highlighted a general dislike for the quantity of information present in the front of the coffee package so, what Altromercato could do, would be to rethink the organization of the information by positioning it on the sides of the package, instead of on the front. Another option to solve the ‘quantity information problem’ could be to change the color of the box containing the information according to the packaging background. Indeed, the data collected have already demonstrated that, on equal terms of information quantity, packages which result less heavy at a glance are those with the information box matching the background color. Moreover, from the outcomes of the conducted experiment it could be interesting to notice the general consequentiality that exists among priming and final preference. In fact, from the first scratch of data collection it has been possible to draw up some hypotheses which have been tested to be true.

More in general, the scope of this thesis was to demonstrate how packaging can influence consumer’s choices and the effectiveness of Altromercato’s new packages under the lens of Neuromarketing and evaluating every consumer input on the background of the brand image that Altromercato wishes to build in its customers’ minds. Especially for what concerns the former goal, the relevance that the design of the packaging has during a decision making process has been confirmed. In some cases very different emotional responses have been registered according to the packaging shown, even though the product inside it was the same, which had a relevant impact on the final decision.

What can be done next in order to extend the significance of this research could be to conduct an experiment involving not only the sight but also the tactile sense. This new experiment could consist of gathering a sample, which could be even wider, and allowing the tested

subject to touch the packages and check whether this physical contact changes the results. Moreover, it could be possible to gather even more interesting results, when running the experiment inside a real shop in order to recreate a more concrete buying experience.

In this case it would be useful to add another Neuromarketing tool, the Galvanic Skin Response - also known as GSR - already mentioned in Chapter 2. This tool has to be applied on the middle-finger and it would measure the emotional state of the tested subject through the activity of his sweat glands. On one hand, it has to be said that during the experiment already conducted, GSR technique was adopted as well, but its results were not useful for the scope of the research as it was mainly about the visual impact of packaging. On the other hand, it could be the chance to demonstrate the relevance of this tool when experiments are run physically, and perhaps, to discover new trends about preferences in terms of packaging material. Even though sight has already proven to have a big role in the decision making process, tactile can play a relevant part as well: it could lead to new results or trends, adding value to the current research.

Appendix A

This appendix will provide a more detailed explanation on how the *semantic analysis* mentioned in Chapter 4 has been carried out for the purposes of the research.

As it had been previously mentioned, all the collected data have been automatically reported from the Google Form to Excel sheets, where everything has been organized into a table counting 15 rows and 20 columns. The rows were one for each of the 14 participants and an extra row has been added to report all the questions asked in both the surveys; the number of columns instead reflected the total number of questions asked to the subjects.

In this section all the steps taken to find the results reported on Table 4.3 about *Priming data* will be reported. It is important to remark on the fact that the same semantic analysis has been conducted to obtain the results reported on Table 4.4 (*Adjectives data*) and Table 4.5 (*Emotions data*) as well.

In Figure A.1 it is possible to notice a variation concerning the number of columns with respect to the data tables described above, as some columns have been added before the main one reporting the question in order to grant a better classification of answers. The first column simply counts the tested subjects; the last one is the main column reporting the question from the survey; and the two in the middle are the keys for the semantic analysis. The column called ‘Priming’ presents one or more words which sum up the concept expressed by participants in the corresponding row, and these words will represent the subsets (*synsets*). The second column, looking at the Figure from the left, has the function to classify the above mentioned summed-up concept as positives, negatives or neutrals following the common estimation standards. Thus for instance, priming concerning nature, freshness, coffee and bio will be considered as positive, being coherent with the image Altromercato wants to communicate.

SOGGETTO	POS/NEG/NEUTRO	PRIMING	Qual è la prima cosa che ti è venuta in mente di fronte alla confezione che hai appena visto?
Sub 1	NEGATIVO	NON CHIARA PROVENIENZA	più colorata delle altre. non capisco se il caffè viene dall'Etiopia o dall'America Latina
Sub 2	POSITIVO	NATURA	natura
Sub 3	POSITIVO	FRESCA	freschezza
Sub 4	NEUTRO	ALTRO	bio classico?????????????
Sub 5	POSITIVO	NATURA	montagna
Sub 6	NEUTRO	CAFFE'	Caffè
Sub 7	POSITIVO	BIOLOGICO	Caffè biologico importato
Sub 8	POSITIVO	BIOLOGICO	Biologico
Sub 9	NEUTRO	ALTRO	mah
Sub 10	POSITIVO	NATURA	seme
Sub 11	POSITIVO	NATURA	Confezione ecologica rispettosa dell'ambiente
Sub 12	POSITIVO	ATTIRA ATTENZIONE	confezione che risalta
Sub 13	NEGATIVO	GUSTO NON GRADITO	caffè al sentore di agrumi?
Sub 14	NEGATIVO	BANALE	Confezione simile a molte altre sul mercato

Figure A.1 - *Semantic analysis: Question one of the first survey “What was the first thing which came to your mind when you saw the package?”, classification based on priming kind and priming translation into positive, negative and neutral categories.*

Once the Priming has been classified, it is necessary to translate the obtained data in order to have a universal understanding, thus converting them into percentages. Figure A.2 represents the pivot table which has been created for the above mentioned purpose, taking into account the data reported in the ‘Pos/Neg/Neutro’ column.

As it is possible to see from the Figure below, the data reported correspond to those of the first row of Table 4.3: in fact, the survey which has been taken into account was the one of stimulus A. The process to be followed to find the percentages of all the other rows will be the same, as well as the one applied to Table 4.4 and 4.5, as mentioned above.

POS/NEG <input type="checkbox"/>	Conteggio di POS/NEG
POSITIVO	57,14%
NEGATIVO	21,43%
NEUTRO	21,43%
Totale complessivo	100,00%

Figure A.2 - *Percentages of positive, negative and neutral answers.*

Disclaimer: Figures A.1 and A.2 report the original image of the tables used to conduct the analysis to avoid the potential misunderstandings which translations could bring.

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