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**ANTHROPOMORPHISM IN THE AUTOMOTIVE INDUSTRY AND  
ITS RELATIONSHIP WITH PERCEIVED BRAND WARMTH AND  
BRAND COMPETENCE**

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JULIJANA AVRAMOV

## AUTHORSHIP STATEMENT

The undersigned Julijana Avramov, a student at the University of Ljubljana, School of Economics and Business, (hereafter: SEB LU), author of this written final work of studies with the title *Anthropomorphism in the automotive industry and its relationship with perceived brand warmth and brand competence*, prepared under supervision of prof. dr Vesna Žabkar.

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## LIST OF ABBREVIATIONS

NCAP - New Car Assessment Programs  
SCM – Stereotype Content model  
BIAF – Brand as Intentional Agents Framework  
TOMA – Top-of-mind awareness

EV – Electric Vehicle  
BEV – Battery Electric Vehicle  
PHEV – Plug-in Electric Vehicle  
AV – Autonomous Vehicle  
ATS - Anthropomorphic Tendencies Scale

# 1 INTRODUCTION

During their lives, people are generally influenced by different factors in their everyday life. People are often unaware of how certain things affect them on the conscious or subconscious level. Our everyday lives are filled with different objects and situations which are often out of our control. Even though humans are regarded as somewhat rational beings, they often behave in an irrational manner. Many theories have been developed during the years which try to explain the psychological processes behind these types of behaviour and they are still being developed to this day. These theories emerge from different stand points, from the economical to psychological ones, all of which are trying to explain why, when, how and in which situations people behave in an irrational manner (Thaler, 1980; Thaler, 2015; Simon, 1997; Tversky & Kahneman, 1992).

If we look at the products and the typical five stages of the consumer buying processes (Kotler & Keller, 2011), we can conclude that they are quite complex and often depend on many different sources of influence. We could say that the more complex the product is, the more time it takes for the individuals to make a decision (Mützel & Kilian, 2016). If we compare purchases of different everyday items such as food, home supplies and other, with purchases of houses and cars, the difference in the level of complexity is obvious. When it comes to cars, different factors such as price, maximum speed, technical specification, fuel consumption, torque, acceleration and many more impact the buying intentions and the decision making process of the potential consumers. Based on all of the above mentioned factors, it is quite easy to differentiate the cars among themselves and compare different models. On the other side, there are often aspects which are closely related to the brand itself and to certain characteristics which can be classified as intangible. Consumers often have assumptions about the person driving a specific car brand (Spiegel Institut, 2024) or in general assumptions about the brand based on the country where it comes from (Qasem & Baharun, 2012).

Many of the factors and concepts previously mentioned have been extensively researched. Certain newer research has focused on areas such as consumer behaviour in the case of use and purchase intentions towards the electric vehicles (Riverso et al., Altamura & La Barbera, 2023) and openness towards car sharing (Schuster et al., 2024) and other relevant topics. However, one psychological construct related to the automotive industry and car design has not been investigated in depth: anthropomorphism. Anthropomorphism involves attributing human traits or emotions to non-human objects (Airenti et al., 2019). In daily life, people often attribute human characteristics to cars, whether they realize it or not. Certain shape and layout of the car front elements can resemble a happy or an angry face (Landwehr et al., 2011).

The purpose of this thesis is to investigate the connection between these concepts and investigate on one hand if the consumers perceive car-fronts as human faces and relate them to certain emotions and on the other if they perceive the “aggressive” looking cars as cars manufactured by competent brands and “friendly” looking cars as cars manufactured by warm brands. Concept of “friendly” and “aggressive” looking cars has been the subject of a research (Landwehr et al., 2011) , and it has been proven that certain position and shapes of the headlights and front grill resemble each of these looks and people do connect specific design with a look which the researchers described as friendly and as aggressive.

First chapter offers a brief overview of the automotive industry and its beginnings. Special focus is put on the consumers and how they behave when it comes to the cars, which factors influence their purchase decisions and how big of a role does the brand itself play in that process. Further, product design in relation to the cars and its importance are explained in this chapter. Second chapter presents the concept of anthropomorphism and the research findings related to it from different fields of study. Classification of anthropomorphism and the criticism around it are also reviewed from different literature sources. Third chapter offers a brief theoretical explanation and findings in the field of brands in the automotive industry and the brand stereotypes, with a focus on the Stereotype Content Model (Fiske, 2018) and the Brand as Intentional Agents Framework (Kervyn et al., 2012). Fourth chapter contains a detailed description of the research methodology, including the purpose of the research, research questions and the research instruments used. Fifth chapter represents a summary of themes which were generated as the end result of Thematic Analysis. In the sixth chapter theoretical and practical implications are presented, as well as the limitations of the research and suggestions for future research in this field.

Qualitative research methods have been utilised as the result of complexity of both psychological constructs of anthropomorphism and brand stereotypes. The research questions were formed with the goal of obtaining insights on which brands are considered to be warm or competent, if the car fronts are perceived as being humanlike and how do individuals relate the “friendliness” or “aggressiveness” of the vehicle with the brand stereotypes assigned to the respective brands. The results of the research serve as the groundwork for a more complete research study in the future, with possible general applicability.



## **2 AUTOMOTIVE INDUSTRY**

In order to fully understand the consumers and their perceptions in relation to the cars, a brief overview of the nature of automotive industry will be presented. Moreover, I will reflect on the basic classification of the passenger vehicles and the main design elements of the car, with the goal of differentiating between the different elements and setting the firm ground for the later analysis and research in relation to these specific design components. In the focus of this thesis, passenger vehicles will be taken into consideration only.

### **2.1 Overview of the automotive industry**

The automotive industry has seen many changes over the years and decades. Many internal and external factors have contributed to the progress seen over the years. Scientific achievements and overall progress of the civilisation have changed the way many industries function, and automotive industry is not exempt from that. Moreover, it is one of the industries which constantly applies new technologies and is striving to change along with the evolving needs of their customers (Candelo, 2019). Even though it is considered as a quite rigid industry, without the needed flexibility for bigger changes, it cannot be said that they are not happening at their own course.

These profound changes have been present since the first cars were being produced. It is quite difficult to determine which year has been marked as the starting point of the production of cars people are surrounded today. A car or automobile can be defined as “privately owned self-propelled road vehicle, usually with four wheels and an internal-combustion engine” (Dowlen, 2013). With the goal of presenting a timeframe, two years will be taken as the years when the foundations to the present automotive industry have been set. First, the year when the modern day conceptual looks and structure of the car was made. Engineer Wilhelm Maybach and Paul Daimler designed a new car in 1901, which was named 35HP based on the power the engine produces, which was 35 horsepower. This car model has been marked as the model on which all the other cars in the following years were based on and still are (DK, 2011). Second, a year which marked the beginning of the mass production will be mentioned. Based on the literature, all the authors from different fields of study agree that the concept of mass production and mass marketing started with Henry Ford and the production of his famous T-model car (Gobetto, 2014). In 1913, Ford has started with the assembly line based production, which has paved the way to all other companies from that time on to produce their cars in the same way.

Given this timeframe, automotive industry has greatly evolved in the past 100 years. Different models, colours and engines have been developed with the goal of offering consumers with different options and appealing to different segments of people. In line with the focus of this research, passenger vehicles can be found in different shapes and sizes. In Europe alone, passenger vehicles account for around four-fifths of EU-made

vehicles (ACEA, 2023). Differences among the European countries exist, both when it comes to consumer preferences and vehicle manufacturers. Different countries have chosen different paths and directions when it comes to car manufacturing. While France and Italy have decided to focus on production of smaller and more affordable cars, Germany has been specialising in more expensive and technologically advanced cars (Fauri, 1996). However, traditional automotive industry which has remained relatively stable has been experiencing major changes in the past two decades when it comes to technology and mobility in general. Certain trends have emerged, where some of the biggest innovations and trends are the rise of electric vehicles due to the increase in their expansion to larger vehicle categories, emergence of autonomous vehicles, growing popularity of ride-sharing and improvements in car safety technology (J.P.Morgan, 2023). Additionally, Several EV brands have emerged in China, where one of four new vehicles bought are electric. These innovators from China are on the path to be present at the global level, seeking dominance with their high-quality and low-cost EVs (McKinsey & Company, 2024). Most prominent of these trends will be briefly discussed in Chapter 2.4.

## **2.2 Classification of passenger vehicles**

In everyday lives, people use different phrases to describe a certain model of a car. Categories and official classification of passenger vehicles depend widely on the region and market where they are sold in. In all cases, the classification is based primarily on the engine size and the length of the car. Different worldwide classifications need to be aligned with the classification offered by the United Nations (UN). According to the classification offered by The United Nations Economic Commission for Europe (UNECE), passenger vehicles which will be the subject of research in this thesis belong to the “M” category.

In Europe, European Commission has segmented passenger vehicles into nine separate categories (European Commission, 1999), each marked with an alphabet letter and a short vehicle description. The classification is still valid in the European Union. Each of the categories includes both electric vehicles and traditional vehicles powered by an internal combustion engine. Additionally, European voluntary organisation (European New Car Assessment Programme – NCAP) which assesses new passenger cars based on their safety and enables consumers make the best choice according to their needs, has also provided an additional classification of passenger vehicles which can be found in the Appendix 2. European Commission’s classification is presented in Figure 1, with the goal of helping the reader get acquainted with these categories and models as the mentioned classification is presented in a clear manner and has been provided with examples for each segment.

*Figure 1: European Commission classification of passenger vehicles*

Passenger car classification	Segment	ACEA classification	Description
Defined by the European Commission	A	Small	City cars, ex: Fiat 500, Opel Adam
	B	Small	Small cars, ex: Renault Clio, Ford Fiesta
	C	Lower Medium	Medium cars, ex: Volkswagen Golf, Honda Civic
	D	Upper medium	Large cars, ex: BMW 3-Series, Volkswagen Passat
	E	Luxury	Executive cars, ex: Audi A6, Mercedes CLS
	F	Luxury	Luxury cars, ex: Mercedes S-Class, BMW 7-Series
	S	-	Sport coupes, ex: Porsche 911, Peugeot RCZ
	J	SUV	Sport utility cars, also known as Sport Utility Vehicles (SUV), ex: Volkswagen Tiguan, Mitsubishi Outlander
	M	MPV	Multi purpose cars, also know as Multi Purpose Vehicles (MPV), ex: Renault Scénic, Ford S-Max

*Source: Adapted from European Commission (1999)*

## 2.3 Car design

New trends and technologies have shaped the way how many car companies manufacture their cars. Consumer attitudes have changed when it comes to driving and owning a car. There have been many changes and trends which are shaping the industry itself such as using mobility services instead of owning a vehicle, increasing demand for connected services, autonomous driving and electro mobility (Candelo, 2019). Nevertheless, the question remains what consumers truly value when it comes to the cars and how do they perceive the design of a vehicle.

### 2.3.1 Car design: concept and basic elements

One of the aspects considered by the consumers when thinking about purchasing a vehicle is the design itself. Design can be viewed from different perspectives by different stakeholders. One of the definitions was offered by John Heskett (2005) where he defined design as "the process of envisioning and planning the creation of artefacts, interfaces, and experiences, using both aesthetic and functional considerations to meet specific user needs and constraints". The definition behind the word "design" reveals the actual reasoning behind the car design and its elements. Every element of the car design is made with a specific purpose in mind. Different literature on product design offer different definitions and dimensions of this construct, focusing on diverse product categories, with the lack of universal understanding that could be applicable to multiple products or services. With the help of in-depth literature review on this subject, a universal definition was offered by a group of authors, where product design refers to a "set of constitutive elements of a

product that consumers perceive and organize as a multidimensional construct comprising the three dimensions of aesthetics, functionality, and symbolism” (Homburg et al., 2015). Research based on this definition offered different insights into the customer segments and their evaluation of different product dimensions. Product design is regarded as one of the main sources of differentiation. Among the mentioned three dimensions, differentiation based on aesthetics and symbolism is a point on which companies should focus, since these design elements can be less imitable by the competitors (Srinivasan et al., 2012).

### 2.3.2 Car body: purpose and basic elements

In this section, the term “car body” will be presented with its main structural elements. Different parts of the car body are subject to the principles of engineering, different national policies and laws, and also laws of physics which will not be discussed in this section. The purpose of the design of the body is to achieve aesthetics, structural function and, ergonomics and spaciousness (Morello et al., 2011). Aesthetics refers to the look of the car, quality materials and overall appearance. Structural function serves the basic purpose of the car, which is to ensure the safe transport of passengers and goods, while ergonomics and spaciousness are related to the comfort and sufficient room for the passengers and goods inside the vehicle. Aesthetics can be viewed as the part of the car body which influences the consumer’s first impression at first observation of the car.

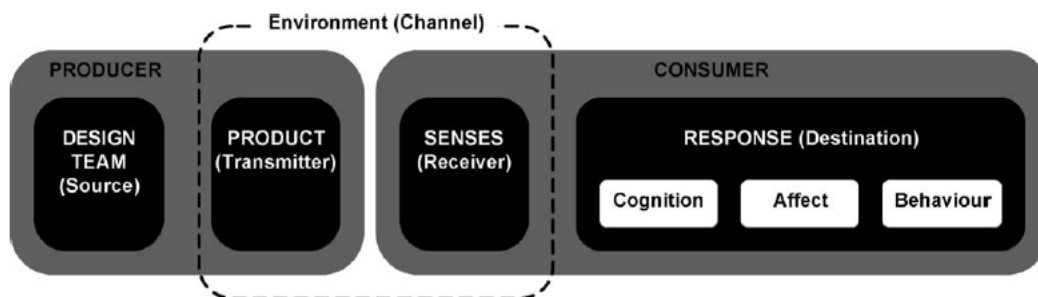
A differentiation can be made between the layout and form when it comes to the car design, where the layout is according to Dowlen (2013, p. 179) a “term for factors that dictate major design parameters of the vehicle as a whole, and these tend to be categorical”. In other words, it refers to the position of the wheels, engine, suspension, driver positioning and other elements. On the other hand, form refers to the very shape of the car and the look and design of the lights, fenders, bumpers, shape of the grille and many more (Dowlen, 2013). Some cars have more or less prominent bumpers, lights are rounder or sharper-edged, grilles can be wider or narrower and many other elements can vary when it comes to car design. Based on research conducted, headlights and side vents of the car have higher impact in defining the style of an automobile than do front grill and overall profile (Chen et al., 2007). Vehicle design has evolved throughout the years, where certain manufacturers have experimented more or less with the design. Design of most of the vehicles fits in the era in which they have been made in. On the other hand, certain outliers can be found among each period. In general, they can be distributed into three different categories as the manufacturers which are always outside the general trends, the car models which are a throwback to some model from the past and the cars which are ahead of their time with the design (Dowlen, 2013).

### 2.3.3 Design as a process of communication

From the already mentioned purpose of the car, we could conclude that most of the aspects are directly related to the consumers. Design of the car is one of the main aspects that appeals to the consumers and affects their buying decision. Therefore, it is crucial that their opinions and attitudes are taken into consideration. Also, understanding their latent desires has become an important factor of influence. With that goal in mind, five different expression modes have been developed through research, with the goal of understanding desires of consumers when it comes to product form. These five expression modes are Explaining Form, Analogizing, Classifying, Conveying Emotions, and Associating (Chang et al., 2006). All of the five mentioned expression modes have their own categories, which can be found in Appendix 11. Deep understanding of consumers and their needs when it comes to design is crucial from another standpoint. Manufacturers require large investments in the mean of capital and time for a new model to be introduced to the market. From 3 to 4 years is the length of design and development process (Thomke, 2001).

If design is viewed as a unique process of communication between the manufacturer and the consumers, then certain phases in this process exist. One of the simplest models of communication process is composed of five different elements: the source, transmitter, channel, receiver and destination (Shannon, 1948). For the needs of inspecting the communication process between the designer and the consumer, a modified model was offered, which can be seen in Figure 2. In this model, the designer of the product can be viewed as the source of the message. The designed product is the transmitter of the message, while at the same time the receiver are the human senses of the end consumer. This part of the process where consumer has contact with the product can be regarded as the environment, or based on the original model, the channel. Finally, the destination is the consumer itself and the appropriate response he gives in form of cognition and affect, ending with behaviour as the final instance of this process (Crilly et al., 2004).

*Figure 2: Communication process between the designer and consumer*



*Source: Crilly et al. (2004)*

This interaction between the product and the consumers is important from the brand perspective as well (Karjalainen, 2003). At this stage, product features and functions are perceived as well as characteristic elements which are tied to a specific brand. Therefore, understanding the consumers' attitudes towards the design elements and their perception of the brand is crucial, with the end goal being the final purchase of the product.

## **2.4 Changes and new trends in the automotive industry**

In the past years, many industries have experienced drastic changes due to the increased concern towards the environment and sustainable development. Different subjects have optimised their production and services, with the goal of making them more sustainable for the people and the environment. These changes can be observed in the daily lives of people, from going grocery shopping to travelling. Depending on where a person lives, different levels of sustainable changes can be seen in urban and sub-urban environments. Sustainable practices require appropriate infrastructure that enables the usage of different innovative products and services. Same can be observed in the automotive sector.

The changes in the automotive industry can be seen in the increased use of passenger vehicles powered by electricity known as electric vehicles or EVs. When discussing EVs, the market for electric vehicles consists of battery electric vehicles or BEVs, and plug-in electric vehicles or PHEVs (European Environment Agency, 2023). The market for the electric vehicles has been experiencing constant growth, from total of 600 registrations in the EU in 2010, to about 1.74 million in 2021 (European Environment Agency, 2023). Besides EVs, autonomous vehicles or known as AVs have already been present on the market for a couple of years. This category of vehicles has an insignificant presence on the market at the moment; however that is quite likely to change. Certain research suggest that the consumers are concerned about the lack of joy of driving and the the feeling of freedom which is linked to the AVs (Casidy et al., 2021).

In the last couple of years a decrease in the kilometres driven has been seen as a possible outcome of the decrease in the utility of driving a car. Some of the reasons found to be behind this decrease are increased level of congestion in urban areas, reduced parking conditions and increased costs related to fuel, taxes and insurance (Nieuwenhuis & Wells, 2015). Some of other factors which had impact on the decline in driving licensing among the population are the result of certain improvements imposed by the country and city authorities such as improvement of public transportation, shared mobility and active mobility (ITF, 2024). This decline is mostly relevant to the population of young individuals from developed high-income countries.

Another trend present in Europe is the increase in the trips per day using the micro-mobility services, even though certain number of these vehicles have been reduced or completely removed (ITF, 2024). E-bikes and e-scooters are, regardless of the fact if they are docked or not, defined as micro-mobility vehicles. Findings from a research which

investigated the usage of these services in Zurich suggest that the typical users of these services are young, male individuals who are highly educated, full-time employed and living without children or car (Reck & Axhausen, 2021). When discussing Europe and the existing micro-mobility services, it has been found that the countries such as UK have usually one car-sharing provider, while in countries such as France, Spain and Italy where bike-sharing schemes can be found as quite common. Lastly, in South and Eastern European countries several international scooter-sharing operators exist (Coenegrachts, et al., 2024).

Lastly, the role of the vehicle manufacturers will no more be solely based on the selling the vehicle and post-purchase services. They will become a part of a larger system of connected products and services, whose end goal is to deliver the mobility package as a whole to their consumers (Laurence & Macharis, 2008). This is also influenced by the changes in lifestyles of consumers, the policies at effect and by the constant technological advancements. With this a brief overview of trends is concluded, with providing readers with a potential direction in which the market could evolve and what are the potential risks and opportunities for the car manufacturers.

## **2.5 Consumer behaviour and customer segmentation in the automotive industry**

In the past 5 years there has been an increase in passenger vehicles in use. In 2016 this number amounted to 233 907 000 vehicles in Western Europe, while in 2021 it has risen to 248 201 000 vehicles (Euromonitor International, 2022). The increase in passenger vehicles is even greater in the developing countries such as India, Brazil, and China. Even though the car market is constantly growing, the structure of it has been influenced by many changes in the past decades. As mentioned in the previous chapter, the emergence of hybrid and electric vehicles has shifted the production towards more sustainable and renewable sources of energy, and has prompted many car manufacturers to introduce new models in their offer. In 2020, Volkswagen has released a whole new line of electric vehicles (Volkswagen, 2020). Other European car brands have also introduced new all-electric vehicles into their portfolio, such as BMW, Audi, Fiat, Citroen, Opel and other.

Regardless of the changes and new trends, the automotive industry has its own structure and determinants which are constant. Despite the yearly changes, the question of consumer segmentation plays a critical role in the future development and growth of this industry. Increase in product complexity raises the question of level of basic understanding of the product by customers. Depending on the product complexity, novel attributes of the products can either have a negative or a positive effect on the product evaluation and sales. Differentiation can be made between low-complexity and high-complexity products, where when it comes to high-complexity products, adding novel attributes can have a negative effect on the product evaluation by customers (Mukherjee & Hoyer, 2001). Passenger vehicles are a category of products which is regarded as a high-complexity product.

Many of the existing customer segmentation used by car manufacturers relies on simple demographic characteristics of their customer base, which lacks direct and tailored approach to different segments on the market (Taylor-West et al., 2018). Without the right communication with the market, potential sales are lost. Therefore, a new approach to segmentation was suggested, which is based on three different determinants: involvement, familiarity and expertise (Taylor-West et al., 2018). Change of focus from demographics based segmentation to “knowledge” based segmentation offers a new approach towards marketing and communication. Changes in trends and consumer preferences have prompted car manufacturers to continuously develop new models and update the existing ones with new elements. As an example, one of the most recognisable car models up to this date is BMW 5-series, where a significant change was applied in the car design replacing the square-focused design to a smoother, less square-looking car (Hyun et al., 2015).

Country where the vehicle is being sold has a strong influence on the design and size of the car. Different countries and regions have certain differences among themselves which are a result of differences between countries and the habits of its population, as well as the conditions in traffic in general. A few examples of this differentiation are the existence of light truck category in the US, ‘Kei’ or micro-cars in Japan, diesel engine passenger vehicles in Europe and the famous two- or three-wheelers which can be found in Asia (Nieuwenhuis & Wells, 2015). All of the mentioned differences are a direct result of people living in these countries and regions – consumers.

Putting aside the perception of different brands and cultural differences, the end result of the customer journey is predominantly influenced by certain attributes which are crucial when it comes to customer evaluation of the vehicles. Research suggests that the purchase price is seen as the most important factor, immediately followed by the operating costs under which we take maintenance and fuel cost under consideration. As the third on scale of importance is the quality reflected in safety and security of the vehicle itself (Laurence & Macharis, 2008). However, the level of importance of these factors is highly dependent on gender and age. It has been found that the importance of safety of the car is directly correlated with the age of the driver, while on the other hand the importance of safety when it comes to men steadily increase with age (Vrkljan & Anaby, 2011). Potential reason behind this change in men preferences could be the transportation of their partners, children and elderly family members. Additionally, even though the consumers state that the price and the cost of ownership are the most important factors when considering buying a new car, economic factors are often overlooked if the goal of the consumer is to convey their wealth and power by purchasing a certain brand and model of a car (Candelo, 2019). This could be a result of different stereotypes which are tied to a certain status, lifestyle or a financial position of the car owner of the respective brand.



### **3 ANTHROPOMORPHISM IN MARKETING**

Psychology as a scientific study covers many different aspects of everyday life, as well as offers insights into the functionalities of the human mind. In marketing, it plays a crucial part in understanding the consumers, their behaviour and using those insights to offer an appropriate product or service which will satisfy their needs. Therefore, this section of the thesis will be used to deeper investigate the phenomena of anthropomorphism, its related term pareidolia<sup>1</sup> and how they are influencing different areas in marketing, such as brand management, products design, advertising and many other.

#### **3.1 Definition of anthropomorphism**

At the very start, it is important to note that anthropomorphism has been researched and different theories have been developed across different fields of study (Guthre, 1993; Piaget, 1929). Until this day, a systematic research framework has not yet been formed, rather a collection of multiple viewpoints, all unified under the same cognitive underpinnings. Moreover, most of the findings lack the psychological aspect and the determinants which affect the anthropomorphism.

The origin of the word offers an initial understanding of anthropomorphism. It was derived from the two Greek words: anthropos (“human”) and morphe (“shape” or “form”), but it is far more than just simple attribution of human life to nonhuman objects. As a phenomenon, anthropomorphism has been present in literature and art for centuries. It has been widely accepted that it represents the process of attributing anthropomorphic features, emotions and behaviours to non-human objects such as animals, artefacts and different natural phenomena (Airenti et al., 2019). This process of attribution can be seen in various aspects of human life and at different stages of it. It is known that children often anthropomorphise, but adults are a part of it as well. It is also important to state the difference in the literature among the two different but interconnected terms animism and anthropomorphism, which can be considered as two extremes on the same continuum. Animism can be regarded as a cognitive inference that an object is alive, while anthropomorphism is attribution of human traits to those objects. Some authors in this field argue that animism is far from the anthropomorphism, which is more common in the adulthood (Piaget, 1929). An example of the distinction between the two is that animism is if we say that the car purrs like a kitten, while if we actually speak to the car as if it was human, we at the same animate and anthropomorphise (Guthre, 1993).

Additionally, there has been a discussion among the researchers in this field whether the nature of anthropomorphism is based on beliefs of people or it is rooted in interaction. While many previous works base their theories on beliefs (Guthre, 1993; Piaget, 1929),

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<sup>1</sup> Pareidolia is defined as „the tendency to see faces in the environment, buildings and objects that surround us “ (Wodehouse et al., 2018).

some of the newer researchers and theorists deal with the interactional part of anthropomorphism (Arienti, 2018). The interaction can be viewed through the movements of the non-human object. People are more likely to attribute mental states to non-human object when they move in a way similar to the manner and speed humans move (Morwedge et al., 2007). Additionally, certain differences exist when it comes to strength of certain anthropomorphic beliefs. Strong beliefs are the ones which are closely tied to the idea of God in different cultures and religions, while weak beliefs are tied to the everyday situations where the anthropomorphic beliefs are attributed to non-human objects such as cars or computers (Arienti, 2018).

Nevertheless what the definition of anthropomorphism is and where it originates from, it has been present in the ages of ancient civilisations, throughout the era of Roman and Greek empires, renaissance, all the way to the present day. As previously mentioned, anthropomorphism has been rooted in many different areas of study. One of the main ones is theology and religion in general, where it has been examined in numerous literatures, as the way of explaining the whole concept of religion, from God, death, punishment, Satan and many other concepts that different religions have. First time the term “anthropomorphism” was mentioned was in the 6<sup>th</sup> century B.C., when Xenophanes tried to explain the similarities between the believers and the object of their belief (i.e. religious agents) (Epley et al., 2008). He noticed that the ancient Greek worshiped gods which had pale skin and light coloured eyes, while the African gods had darker skin and eyes (Epley et al., 2007). Both rationalists and theologians are hesitant to acknowledge and further examine anthropomorphism. Rationalists believe that it represents a flaw in human thought and ratio, while theologians often see it as a source of potential limits, where the concept of God could be bounded to and founded on the people’s perception of themselves (Guthrie, 1993). Many great psychologists and philosophers have tried to explain anthropomorphism, from Francis Bacon, Nietzsche, Socrates, Freud, Lange and others. Piaget has examined anthropomorphism in children (Piaget, 1929), but none of the above mentioned have come to a mutual understanding on this subject.

Strong empirical evidence points to the same cognitive processes in the human brain, which occur when thinking about a human or an object (Garvert et al., 2014; Palmer & Clifford, 2020). Findings from another research (Cullen et al., 2014) suggest that the link between anthropomorphic thinking and the changes in structures of brain regions which are active when thinking about mental states of other individuals in fact exists. This provides objective evidence for the fact that the same mechanisms used for perceiving other people are applied also in the process of non-human object perception and anthropomorphism.

Lastly, when discussing the connection between anthropomorphism and our brain it is worth mentioning that it has been suggested that anthropomorphism can serve to improve emotional awareness and social skills in autism, as the interaction with non-human agents has been viewed as less stressful than the one with humans (Negri et al., 2019). Possible applications of anthropomorphism are yet to be determined in the future.

### **3.2 A three-factor theory of anthropomorphism**

As previously mentioned, most of the research on anthropomorphism is scattered across different fields and does not offer a psychological account for why this process happens, under which circumstances and when do people tend to anthropomorphise in a smaller or a larger extent. Anthropomorphism is found not to be grounded in any specific belief systems but rather is a result of interaction. People do not believe that cars or computers possess human minds. However anthropomorphism is based on an interaction which can be a result of different motivation such as desire, fear, uncertainty and other (Arienti, 2018).

That is why a theory emerged in the field of psychology, to better understand why anthropomorphism is variable in nature and which factors determine it. “A three-factor theory of Anthropomorphism” or also known as “SEEK” (Epley et al., 2007) will be presented in this chapter in details, with the goal of offering a more comprehensive understanding.

Theory was offered by the three psychologists from Chicago who were intrigued by the lack of psychological account of anthropomorphism. The theory itself has been derived from the work in social cognition, by investigating how people feel about other individuals and applying those same assumptions in the process of anthropomorphism (Epley et al., 2008). In order to offer an explanation on the background of the inductive process, a theory was developed. It focuses on three main determinants, which are: elicited agent knowledge, effectance motivation and sociality motivation. The interaction between these three factors and different independent variables is believed to result in specific response and different extents in which people anthropomorphise.

#### **3.2.1 Elicited agent knowledge**

The first determinant which will be presented is elicited agent knowledge. This determinant is rooted in cognition and is related to the knowledge people possess about other humans and about themselves as well (Epley et al., 2007). Based on that knowledge, when faced with non-human agents, people can use that knowledge to make sense of the unknown.

Being a human provides them with the immediate experience of what it feels like to be human, contrary to the non-human agents. No human can know how it feels to be a chicken, snake or a mouse. Also, humans are prone to imitation and to empathise with other people, based on the mirror neuron system, where it has been proved that individuals experience the same neural processes in their brain when they are asked to imitate another human and when they are asked only to observe, without imitation (Epley et al., 2007). This proves that people have the ability to mirror other people’s emotions and actions onto themselves (Rizzolatti & Craighero, 2004). Additionally, related to the mirror neuron

system, people have similar neural responses when they are presented with human and robots as non-human agents (Gazzola et al., 2007). Many of these experiences are learned from early age, where infants are in constant contact with humans and in that way learn about both humans and observe the non-human agents around them. Some variability in the level of how much people anthropomorphise will be given in relation to independent variables previously mentioned: dispositional, situational, developmental and cultural.

The first one, dispositional variable, can be explained through the so called need for cognition. The level to which the person is willing to expand their cognitive abilities, will determine the level at which a person is likely to anthropomorphise less or more. The higher the person's need for cognition is, the lower is the likeness that they anthropomorphise non-human agents (Nicolas & Wykowska, 2021).

Second variable is the situational one and can be observed through perceived similarity. In other words, the more the non-human agent is similar to a human, the higher is the chance that people will anthropomorphise. This is highly influenced by two dimensions of similarity, similarity in motion and similarity in morphology (Epley et al., 2007). Similarity in motion suggests that the non-human moves, has similar gestures and speed of movement to the ones natural to humankind. Similarity in morphology relates to the extent in which the features of the non-human agent are similar to the ones of human. As an example, we can mention instances when people are walking in the dark outside and they see a figure in the distance which resembles a human, when actually it turns out to be a non-human object, which has elements that from the distance resemble human arms, hands, feet or other body parts. Also, the speed of movement can be viewed as an important variable. The more the speed of movement of a non-human agent is close to the speed of humans, the higher is the chance of anthropomorphising those non-human agents (Morwedge et al., 2007). These similarities are widely used by marketers in product design, brand management and other fields, which will be discussed in details in the next chapter.

Third are the developmental influences. In order to anthropomorphise non-human agent, people need to be aware and conscious of other people and themselves (Epley et al., 2007). Autistic children can be seen as individuals with a lack of ability to understand other people and their emotions and mental states. That is why it is considered that children with autism anthropomorphise non-human agent less, due to the fact that the initial understanding of the humans is not complete and understandable. Also, with the process of growing up from a child to an adult, people's perceptions change due to the gained knowledge and experience, therefore adults tend to less anthropomorphise than children.

Fourth variable are the cultural influences, which are related to the environment people grow up in and what their surrounding culture teaches them. Main thing to point here are the differences between the industrialised and non-industrialised cultures (Epley et al., 2007). People that belong to the non-industrialised societies and cultures are in a greater

extent surrounded with the nature, animals, plants and different other non-human agents. They rely on nature in a greater way, therefore based on this theory they are less likely to anthropomorphise those non-human agents, which can be also concluded for industrialised societies and their level of anthropomorphism towards the mechanical object, such as car, computers, phones etc.

### 3.2.2 Effectance motivation

The second determinant of anthropomorphism is effectance motivation, which is based on motivation as the name suggests, unlike the previous determinant which was based on cognition (Epley et al., 2007). In this case, people tend to avoid uncertainty in their environment and in the non-human agents around them. Due to that fact, it is more likely that they anthropomorphise more. People often resort to anthropomorphism in cases such as the natural disasters and similar. That's when they tend to find explanation why something happened, today as they did for hundreds of years. It can be often heard during floods, hurricanes and other disaster that people tend to express their beliefs in God and that the God was angry for some reason at them. Anthropomorphism may be utilised to increase the predictability and comprehension of what would otherwise be an uncertain world, much in the way that egocentric knowledge about one's own preferences can serve as a useful guide to another person's preference in the absence of any additional information (Epley et al., 2007). Therefore, when the effectance motivation is on a high level, anthropomorphism should increase and vice versa. In the same way, the more a non-human agent is unpredictable or not understandable, the tendency towards anthropomorphism increases as well. Once more, a short overview of the relation between the determinant and the four factors of influence will be presented.

When it comes to dispositional influences, need for closure and need for control can affect the extent to which people anthropomorphise (Epley et al., 2007). When there is a strong need for control, people will tend to anthropomorphise more. The same goes for the need for closure. The stronger it is, the higher is the level of anthropomorphism. We could say that when someone experiences for example the loss of a loved one, and is seeking some closure, they can tend to anthropomorphise and say that the God took them or that the faith wanted it that way. Both concepts of God and faith are in this case anthropomorphised using the verbs close to humans such as "to take" and "to want".

Situational variables are explained by the anticipated future interaction with a non-human agent and the apparent predictability (Epley et al., 2007). The higher the chance is of a human and non-human interaction in the future, the higher is the motivation for humans to understand the agent and therefore anthropomorphise more. The other aspect, more closely related to the subject of this research, is the apparent predictability. The less predictable the non-human agent is, the higher is the motivation of an individual to anthropomorphise (Epley et al., 2007). If a person's car acts in an unreliable and unpredictable manner, it is

more likely that the individual will perceive the car as an intentional agent (Morewedge, 2006), or in other words they will anthropomorphise at a higher level. This is only the case when the person is faced with the unexpected negative influence. The question persists if this applies to unexpected positive influence or expected negative influence as well, which leaves room for further research.

By mentioning lastly cultural influences, a familiar concept which appears in the literature regarding cross-cultural communication will be mentioned here, which is *uncertainty avoidance*. As one of six cultural dimensions, it was meant to explain the differences in behaviour between different cultures, based on the extent to which people are comfortable or not with uncertainty and unknown situations and agents (Hofstede, 2001). Different cultures vary among themselves in the extent to which they can or cannot deal with uncertainty. This can be observed in different segments such as religion, consumer behaviour, education etc.

It is believed that individuals, who belong to cultures that rate high on uncertainty avoidance, are more likely to anthropomorphise than the ones that rate low. That is due to the fact that they tend to avoid unknown and they will therefore try to give meaning to non-human agents, to lower the uncertainty they are faced with.

### 3.2.3 Sociality motivation

Third and final determinant of the SEEK theory of anthropomorphism is sociality motivation. As such, it also is rooted in the motivation and has its own implication on anthropomorphism. From very young age, people seek social connection with other humans (Epley et al., 2007). However, when there is a lack of human-to-human connection, people tend to seek that type of connection in different non-human agents, most commonly in animals and in God. When it comes to other non-human agents such as computers and smart objects, it has been proven that anthropomorphic cues increase the sense of social connectedness between the user and the object (Kang & Kim, 2020). Early research which was conducted in the field of psychology suggests that non-human substitutes can provide human with some degree of connectedness, but the question still remains to which extent and with what consequences (Harlow, Dodsworth, & Harlow, 1965).

Dispositional influences can be viewed through chronic loneliness. Most humans have certain period when they feel lonely. However, those individuals who feel chronically lonely tend to anthropomorphise at a higher level in comparison to the ones who do not lack social contact with humans. Therefore, tendency to anthropomorphise increases with the increase in the feeling of loneliness (Epley et al., 2007).

Situational influences can lead people to feel social disconnection. When there is a lack of social connection with humans, seeking social connection with non-human agents is quite

common (Epley et al., 2007). As already mentioned, the role of pets and religious agents comes into focus then.

Developmental influences directly influence the level and style of attachment a person develops. Those individuals with insecure style attachments tend to seek social connection with non-human agents in a greater extent, with the goal of creating a more secure social relationship (Epley et al., 2007). To some individuals, social connection with non-humans can be perceived as easier than the one with the humans (Waytz, 2013).

Cultural influences can be once more viewed through one of the six cultural dimensions, which are individualism and collectivism (Hofstede, 2001). This dimension can be viewed from two different perspectives. One is the potential feeling of greater loneliness in the individualistic cultures, while the other concerns the situations of momentary isolations, which is believed to be more prominent in the collectivistic cultures, where people are more accustomed to social relationships and connection than the people in the individualistic cultures. However, this dimensions needs deeper empirical research to be performed systematically across different cultures.

By this, a brief overview of the SEEK theory has been concluded. This theory examines the psychological account for anthropomorphism and therefore is crucial for a deeper understanding of this research. It also offers an opportunity and motivation for a more detailed examination of psychological determinants, which would offer wider comprehension on this subject in general.

### **3.3 Types of anthropomorphism and anthropomorphic forms in design**

Anthropomorphism has been regarded as a fallacy or error in thought throughout many years, and still is. It can be observed in different situations and under multiple conditions, as already mentioned. A distinction has been made between different categories and subcategories of anthropomorphism.

Based on a widely used scale for measuring anthropomorphism (Anthropomorphic Tendencies Scale - ATS), four distinct categories of anthropomorphic tendencies have been developed (Chin, et al., 2005). First type is the extreme anthropomorphic tendencies, where people tend to anthropomorphise non-living objects such as computers, cars and many others. Second is anthropomorphism towards a god or a similar entity of higher power, where different gods and constructs such as destiny or nature are the object of anthropomorphism. Third and one of the most common is anthropomorphism towards pets, which can be observed in everyday life. Fourth and final is the so-called “negative” anthropomorphism, where people tend to anthropomorphise in situations where they feel irritation or anger towards non-human objects such as cars. Such situations occur when a person feels irritated that his or her car won’t start or when the computer malfunctions and doesn’t want to debug.

A more in-depth analysis and classification was offered by an American university professor John Andrew Fisher. Based on his work, the main two categories to be defined are interpretative anthropomorphism and imaginative anthropomorphism, with possible third category which is defined as the anthropomorphic beliefs (Fisher, 1991). A brief overview of all three can be found in the section below.

Interpretative anthropomorphism is the type of anthropomorphism which has been widely criticised by different theoreticians from different fields. It refers to the instances where people make inference about the animal behaviour using predicates which could be linked with humans and their behaviour (Fisher, 1991). Typical examples would be statements based on observations of animal behaviour such as that the birds are arguing, the horses are playing and many other. This would occur in situation where the individual would hear for example multiple birds in a small place loudly chirping and instantly relate it to the way humans stand in close proximity and raise their voices while arguing.

Imaginative anthropomorphism has been present in different books, movies and fictional characters for a long period of time. It refers to productive activities of intentionally creating animal characters that dress as humans, have same gestures, voices, thoughts and other characteristics in relation to physical appearance or behaviour (Fisher, 1991). Many of these representations can be found in children animation movies as well as children books.

Anthropomorphic beliefs are the category where people indeed hold certain beliefs that animals have certain similarities to humans, such as their own language or self-awareness. The presence of this category is not definite, as anthropomorphism is viewed as error in cognition while beliefs are based on completely other mechanisms (Fisher, 1991).

Another dimension of anthropomorphism is closely related to the appearance of non-human object which are being anthropomorphised. This classification has been offered by a group of academics who tried to present the basic four categories of anthropomorphic forms which are structural, gestural, character, and aware (DiSalvo et al., 2004). Structural anthropomorphic form will be in focus in this research and it represents the instances where the form of a non-human object has similar shapes, mechanisms or morphology to a human body. The example used for the purpose of writing this master thesis can be found in cars and their front parts, where the orientation and distribution of certain elements creates an illusion and reminds people of a human face. One of the researches conducted suggested that the dominant characteristics which affected the occurrence of anthropomorphism are size and composition (Wodehouse et al., 2018). Second are the gestural anthropomorphic forms that are based on the ways in which humans communicate, make movements or make certain expressions using their body. The third are the anthropomorphic forms of character where human traits and roles are being imitated. It can involve structural forms as well, however enriched with elements and characteristics which provide a deeper meaning and understanding of an object. Fourth and



final is the aware anthropomorphic form, which can predominantly be found in the fiction in the present. On the other hand, the use of automation, robotics and humanoids will eventually shift these forms from existing only in fiction to actual real life.

### **3.4 Anti-anthropomorphism**

Generally regarded as an error in human judgement or in other words, cognitive bias, anthropomorphism has been approached in some literature from a negative standpoint. Three different reasons stand behind the majority of the negative standpoints when it comes to anthropomorphism. The first is related to the common sense knowledge and role of intuition in the scientific image of the world which exists as an objective reality. The second one refers to the issue of animal rights and the anti-specism, which denies the superiority of one species over another. Lastly, there is the use of human as a model by which the scientific explanations are based on (Bruni et al., 2018). According to Wynne (2007), anthropomorphism should not have any significance or value in objective science of comparative psychology. He views it as a reminiscence of old ways of thinking about the animal psychology, before the emergence of the modern objective science. He believes that the studies of cognition in animals can only develop further once they are free of these pre-scientific constructs such as anthropomorphism.

It is also worth mentioning another error in human which occurs, reflected in the process of dehumanisation which represents the failure to attribute humanlike capacities, emotions and feelings to other humans (Waytz, 2013). As a result of this finding, anthropomorphism should be used with great caution with the goal of reducing or completely neutralising the negative consequences (Mecit et al., 2020).

When it comes to its practical use in the fields of marketing and advertising, anthropomorphism should also be used with caution if it increases the likelihood that people engage unknowingly in undesirable outcomes such as an increase in gambling. For instance, people will disclose more information to a virtual human when they are told that it is controlled by automation rather than a human (de Visser et al., 2016).

Lastly, it has been found that if certain brands are perceived as being human and quite low on the attractiveness scale, they were rated less positive than the brands which were perceived as products, which shows that the effect of anthropomorphism can have negative consequences (Delgado-Ballester & Mariola, 2020). Another study has found that if the person is trying to enhance their self-perception with purchasing a certain item, anthropomorphising that object can have an opposite effect. The reason for this lies in the perception of anthropomorphised object as humanlike in terms of other people, rather than the extension of their own selves (Zhang et al., 2023).

### **3.5 Anthropomorphism and marketing**

Anthropomorphism has been present in marketing for quite some time. Its application can be found in different areas such as product design, brand management, advertising and other. Despite that, little research exists until this day about the mechanisms of anthropomorphism, how it affects consumer and their behaviour, and which societal and dispositional factors influence it under different circumstances. The SEEK theory (Epley et al., 2007) provided the theoretical basis for the anthropomorphism in general, but there is still a lack of research in relation to its application in the field of marketing. This has slowly started to change, due to more frequent application of different robotic agents in the everyday life of people. From voice-controlled assistants (Calahorra-Candao & Martín-de Hoyos, 2024) and household robots (Bylieva et al., 2023), to different highly-technical humanoids (Sacino, et al., 2022), the market keeps expanding by every year. The increase in number of these products on the market has prompted market researchers and companies to take a deeper look into this field with the goal of understanding their consumers and offering the best versions of the products on the market.

Anthropomorphism is likely to happen spontaneously when people start to anthropomorphise without any intentional external cues provided by the brand, company or employees. Also, it can occur in situations when companies and marketers deliberately create products and market them by encouraging consumers to humanise the products or brands. These efforts made by marketers can occur by designing products with humanlike features, by encouraging consumers to view the products as human with the use of promotion messages, or lastly by combining both approaches simultaneously (van den Hende & Mugge, 2014). Anthropomorphic marketing strategies, such as naming cars and giving them personalities, further strengthen this effect, making the vehicles more memorable and appealing to consumers (Chandler & Schwarz, 2010). Anthropomorphism finds its application in advertising as it has been found that face and pareidolian advertisements attract greater attention when compared to the regular advertisements which do not contain these cues (Guido et al., 2019), leading to a greater brand recognition. Additionally, consumers prefer both face and pareidolian advertisement to other advertisements which do not have a face or do not contain any visual cues used to activate the anthropomorphism in individuals. Carefully examining the source of variation in anthropomorphism can help the companies identify the type of person who is more or less likely to be affected with such campaigns which contain these cues and consequentially find ways in which to make them more or less effective (Waytz et al., 2010).

Moreover, gender differences exist when it comes to anthropomorphism, where it has been found that women are more likely to clearly see faces in non-human objects (Hoback, 2019; Proverbio, 2017). Differences between gender, as well as differences between each individual regardless of the gender are not only sources of variation in level of

anthropomorphism. Each individual can vary within themselves as well (Shaman et al., 2018), which can be influenced by factors such as emotional state, lifestyle or stage in life.

### 3.5.1 Brands and anthropomorphism

In general, when anthropomorphism is in focus, it is either in relation to the brand or the product itself. Brand anthropomorphism can be defined as the level in which a product of a certain brand is seen as human or that it possesses certain human traits (Guido & Peluso, 2015). There are two different ways in which brands are anthropomorphised. People can see brands as human by assigning different demographic, social or psychographic characteristics to them which are in a certain proportion aligned with the characteristics of the person anthropomorphising. The second way relates to the extent to which a person feels close to the brand personality and wants to connect with it (brand as family, friend) or feel distant from it (brand as used car salesman, group of executives) (Kniazeva & Belk, 2010). In a way, brand anthropomorphism can be regarded as a foundation and antecedent for brand personality (Guido & Peluso, 2015).

Enriching product design with features which are perceived as human-like, can aid in building brand personality and help companies position themselves in a desired way on the usually highly competitive market. That is where the differentiation has been made between brand personification and pure anthropomorphism, where the brand personification is regarded as a process of applying a rhetorical figure with human traits or characteristics to a brand and presenting it as if it were a living person, usually with predefined age, gender or lifestyle (Chen, 2017).

Increasing brand anthropomorphism is possible by communicating with the consumers in the first person, using stimuli that imitates human characteristics, creating a strong brand personality and interact through social media (Rauschnabel & Ahuvia, 2014). Using faces and pareidolia in advertisements also leads to greater brand recognition (Guido et al., 2019). However, certain caution should be applied when it comes to intentionally using anthropomorphism as it may lead to more positive evaluations only in situations when the type of person brought to mind is associated with positive feelings (Aggarwal & McGill, 2007). Another research conducted suggests that people tend to apply the same “beautiful-is-good” belief about the products in the same way they do when it comes to the perception of other humans. This consequentially led to an increase in interest in the products, enhancing the preferences for these items (Wan et al., 2017). Advertisements which induce a certain level of anthropomorphism have higher levels of ad engagements and more positive attitudes than the advertisements which do not contain any elements which can induce certain level of anthropomorphism (Chen, 2017).

Besides advertising, packages and brand design, anthropomorphism find its application in robot design, digital assistants such as Apple’s Siri and Amazon’s Alexa, brand mascots and digital avatars, following the recent developments in technology (Belk & Kniazeva,

2018). It has been found that anthropomorphic features, if used in the automation processes, can increase the trust resilience. Automation agents which appeared to be more human were less complied with in comparison to more machine-like agents, which resulted in a worse performance (de Visser, et al., 2016). The role of anthropomorphism has been more deeply researched in the past years, following the rise of automation, artificial intelligence and different robots which are now part of people's everyday lives.

### 3.5.2 Anthropomorphism in the automotive industry

Seeing faces in the fronts of cars has been widely accepted and mentioned throughout the literature, but little empirical research can be found. Deeper examination between the cars and faces of people shows that both are bilaterally symmetric to a vertical axis. Additionally, both have a separate upper part and symmetrical pair of extensions on the sides (ears, side-view mirrors), as well as an ellipsoid on each side: eyes on human faces and headlights on car fronts. Finally, two features are located at the centre of both human face and car (nose/grille, mouth/additional air-intake), one under another (Keaveney et al., 2012). Human's perception of car fronts as human faces can also be partially explained with the principles of Gestalt psychology, where the whole of anything is greater than its parts (The Editors of Encyclopaedia, 2024). In other words, the size, shape and the distance between headlights and the grille resemble eyes and mouth of a human face. When taking into consideration the appearance of human faces, it has been shown that people in general do not like dominant-looking faces on humans. However, when it comes to products and the faces perceived, people do like dominant-looking product faces (Maeng & Aggarwal, 2018).

Gaze patterns in a research conducted with the use of eye-tracking technology revealed that people perceive headlights as eyes, grille as the nose, grille or air-intake as mouth and side-mirrors as ears based on the eye movements (Windhager, et al., 2010). When presented with cars people focus on the headlights in the same way as they focus on human eyes. The air intake vents and the grille have been regarded as the mouth, which could explain the reasoning behind not seeing back ends of vehicles as having faces or with an angry facial expression (Hoback, 2018). Car fronts which were perceived as baby-faced faces were perceived as cuter than the other car fronts (Miesler et al., 2011). Additionally, when thinking about their cars in anthropomorphic terms, people's willingness to replace their car decreases, attributing less importance to the quality of the vehicle itself when contemplating the replacement (Chandler & Schwarz, 2010).

Car fronts can be regarded as car faces and they serve as a point of differentiation amongst the manufacturers. Car faces are often used to signal the market positioning of the brand and its identity (Keaveney et al., 2012). Around 70% of drivers can identify and make a judgment of the vehicle just by its headlights and grille. Also, 88% of men and 64% of women prefer vehicles which possess a distinctive car front (Welsh, 2006).

Additionally, when it comes to identifying a specific model of a car, eyes play a bigger role in the identification than the mouth (Keaveney et al., 2012). It is quite important for automotive brands to maintain some "facial continuity" for purposes of recognition and awareness when the competition, regulations and mechanical advancement have resulted in cars with similar basic characteristics (Forbes, 2012). Based on this practice, it can be observed that many manufacturers tend to use one "car face" across their different models. Usually, this is a result of success of a specific model, where the car front then gets transferred to other models and product lines. This can be observed with many manufacturers, such as BMW, where its models BMW 3, 5 and 7 have similar fronts as can be seen in Figure 3.

*Figure 3: Car fronts of BMW series 3,5 and 7 top-to-bottom*



*Source: Adapted from BMW (2021), BMW (2024) and Elektrische Auto (2020)*

## **4 AUTOMOTIVE BRANDS AND BRAND STEREOTYPES**

Concept of brand and brand anthropomorphism has been briefly reflected on in subchapter 2.5.1. Brand as a term is widely used in both theory and practice, from casual conversations among people to different research and scientific disciplines. It is one of the constructs which are central to marketing and it has been widely used and later on researched as well, since the late 19th and early 20th centuries (Clifton & Simmons, 2003). Brands are often viewed and thought off as if they were human. Generally, there is word about the brand personality, relationship with brands and similar phrases which are taken from the everyday talk where people use them to describe their attitudes and relationship with other people. A differentiation between two closely related terms, brand personality and brand stereotypes, was already discussed in subchapter 3.5.1. In this section, more theoretical background and research implications will be offered on the concept of brand stereotypes.

As already mentioned in subchapter 3.5.1, brand stereotypes are generalised beliefs held by consumers about brands as intentional agents. One of the widely used models for researching and explaining the stereotypes for different categories of subjects is the Stereotype Content Model (SCM). Primarily used for exploring the stereotypes in relation to countries and different groups of people (Fiske et al., 2002), it has been later on adapted for research on stereotypes specifically in relation to brands. A new adjusted model was developed based on the SCM model, which is known as Brands as Intentional Agents Frameworks (BIAF).

### **4.1 Brands in the automotive industry**

As already mentioned cars are regarded as complex products and as such are in need of careful market positioning and branding in face of an increased competition. Today's automotive industry can be seen as highly standardised, where most of the manufacturers and their products are similar to each other when it comes to safety and technological standards, quality in general and lately even design. Therefore, it has become quite difficult for different manufacturers to differentiate their products and point out the features which are outstanding in comparison to other brands on the market (Niefer, 1994).

#### **4.1.1 Brands as factor of differentiation**

Different national and international bodies work towards a more unified and standardised production with the goal of providing consumers with a quality product across different continents. An example of such group is the International Automotive Task Force (IATF), which gathers biggest global brands from the automotive industry such as BMW Group, Ford Motor Company, General Motors, Jaguar Land Rover (JLR) Limited, Mercedes-Benz Group AG, Renault Group, Volkswagen AG and other (IATF, 2022).

Another source of standardisation comes as a result of different brands being owned by the same company, which is a trend that has been present for couple of decades. Such company is Volkswagen AG, which has ten brands in three different categories: volume (Volkswagen, VW Commercial vehicles, Škoda, Cupra and Seat), premium (Audi, Bentley, Lamborghini and Ducati) and sport (Porsche) (Volkswagen AG, 2022). The respective three categories can be viewed as the mass-market brands, premium and niche brands (Candelo, 2019). Standardisation in this case comes as a result of different brands across the groups sharing the same platform the specific model is based on, including multiple identical components.

That is when the brand identity plays a crucial part in distinguishing the models one from each other (Kapferer, 2008). Applying unique design elements such as shape, colour and texture can aid in brand identification without the use of brand name, logos or other brand elements. (Herm & Möller, 2014). Choosing the appropriate marketing strategies and communication depends on the brand personality a brand chooses to focus on and maintain throughout the years. If a brand wants to have a competent and sophisticated brand personality, adding a smiley and cheerful face to the product or an ad can potentially transform this image from a competent to a playful one (Aaker, 1997). The final goal of every company is for the consumers to have their brand in mind when choosing an item from the product category the brand belongs to. Starting with complete unawareness about a brand, to brand recognition and in the end resulting in the top-of-mind awareness as the highest ranking of brand awareness a brand can achieve (Shimp & Andrews, 2012). Achieving such level of awareness in a way presents a barrier to entry for any potential new-comers (Kapferer, 2008). The potential factors that influence the choice of brand which comes first to mind of the consumers are possibly most recent advertising or previous experience (Farris et al., 2010). Additionally, brand recognition will in most cases be high for most of the brands, except the new brands on the market (Aaker, 1996).

#### 4.1.2 Automotive brands and consumers

The role of brand as a point of differentiation can be seen with every manufacturer of passenger cars. Taking a closer look at the advertisements and messages presented by the companies, it can be observed that each manufacturer has been quite consistent in their communication with consumers. Every car serves a specific need in the form of transportation vehicle. BMW cars and Fiat cars both satisfy the consumers' need of going from place A to place B. But their brand and the way they communicate their values is different.

Car manufacturers do not sell services to their consumer, but values. This can be viewed through the branding efforts of different car manufacturers. Volvo is known as being the car with highest possible levels of safety (Kapferer, 2008) and that is what their branding focuses on, demonstrating through their history that they are pioneers when it comes to

safety innovations such as Rearward-facing child seat (1972), Side Impact Protection System (1991), Whiplash Protection System (1998) the Inflatable Curtain (1998), Roll Stability Control (2002), Pedestrian Detection with Full Auto Brake (2010), Run-off Road Protection (2014) and other (Volvo Group, 2020). On the other hand, many brands have created a feeling among their buyers and non-buyers which is reflected in their faith in a manner that they believe they have achieved something great and have reached a specific level of personal success if they manage to purchase a car from a brand such as BMW (Kapferer, 2008, p. 21). According to a former Chairman of Mercedes-Benz AG, their company recognises five different factors which influence if the brand will be successful or not and those are: products itself, service, motivation and communication (Niefer, 1994).

Owners of the same automotive brand perceive themselves as being similar to the others owning the same brand, while at the same time perceiving themselves quite different from the owners of other car brands (Grubb & Hupp, 1968). In other words, consumers of a brand hold self-concepts similar to the self-concepts they attribute to other consumers of the same brand (Grubb & Hupp, 1968). That is when certain stereotypes about owners of different brands are formed and held by different individuals in the society.

Future of the automotive industry and the way it is heading is still unknown. A decline in the proportion of young drivers has been noticed (Nieuwenhuis & Wells, 2015). The next generations of consumers which belong to the Generation Z have been found to have no great interest shown in owning a car, but rather are used to acquiring needed services with just one click (Interbrand, 2019). Most of the needs of a digital consumer can be met with the use of different apps and digital services such as their need for food can be satisfied with the use of application such as Uber Eats, need for entertainment with Netflix and Spotify, and many other. How and in which way will the relationship between the consumer and the automotive brand evolve in the future is still unknown and is subject to ever-evolving needs and desires of consumers.

Automotive brands differ between themselves based on the fact if they target all customer segments or they specialise and focus on a specific segment (Kapferer, 2008). BMW as an automotive brand falls into the category of specialists, while on the other hand brands such as Fiat and Citroen belong to the generalist category, also known as the multi-segment brand. Another classification offered by Candelo (2019) divides the European automotive market between two categories, mass producers such as Fiat and Opel, and the high-end specialist, which can further be divided into premium (BMW, Mercedes) and niche manufacturers (Porsche, Bentley, Ferrari etc.). Brand belonging to a certain category has effect on the consumer perceptions as the communication, positioning and all other marketing activities convey different messages and target different consumer needs.

Customers form a specific image of a brand based on their experiences with the products and services. Every customer has certain qualities in mind when thinking of a specific brand. The goals of the brands should be to align the brand values with the qualities



customer attribute to the brand. In the case of Mercedes-Benz, some of those qualities could be quality, reliability, safety, forward-thinking technology and, in the field of commercial vehicles, overall economy (Niefer, 1994). In the following 5 years it is likely that the top two priorities for the consumers in the automotive segment will be data privacy and security, and driving performance (KPMG, 2024).

BMW is one of the most widely used examples of excellence in brand strategy execution and consistent communication at every customer touch point. Its visual expression of the brand is clear, attractive and distinctive, creating a certain image in the eyes of customers which is not subject to great fluctuations over the course of time (Clifton & Simmons, 2003). Creating an affective bond between the consumer and the brand is crucial for the success and positioning of the brand. Findings suggest that the social and emotional values take priority over the economic value when the previously mentioned bonds are considered (Kumar et al., 2014).

Based on the regular reports provided by Interbrand, the rankings with their respective values and growth can be seen in the Table 1. The brand with the highest growth rate in 2023 was the luxury German brand Porsche, ranking at 47th place on the Best Global Brands list. In the first 10 out of 100 global brands on the list, 3 of them belong to the automotive industry. The success of different brands in the automotive industry and the level of sales achieved is significantly dependent the brand value a certain manufacturer possesses (Nadanyiova et al., 2019).

*Table 1: Top 10 best global brands from the automotive industry*

<b>Brand name</b>	<b>Best Global Brands Rank</b>	<b>Brand value (in mio USD)</b>	<b>Growth</b>
Toyota	06	64,504	+8%
Mercedes-Benz	07	61,414	+9%
BMW	10	51,157	+10%
Tesla	12	49,937	+4%
Honda	27	24,412	+7%
Hyundai	32	20,412	+18%
Audi	45	16,352	+9%
Porsche	47	16,215	+20%
Volkswagen	50	15,140	+2%
Ford	51	14,867	+3%

*Source: Adapted from Interbrand (2024)*

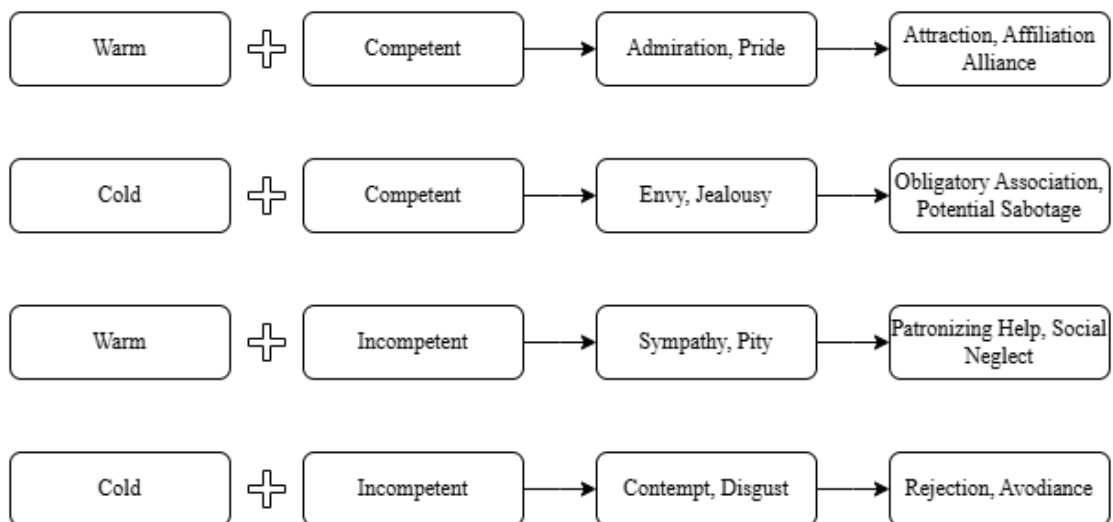
## **4.2 Stereotype Content Model**

The Stereotype Content Model or SCM is a model which differentiates between two basic dimensions of social perception with humans and those are brand warmth and brand competence. Different combination of the given dimensions results in different emotions or

prejudice. These stereotypes aid individuals in navigating through their perception when meeting new individuals or members of a group. The goal of the individual is to try to predict the capabilities and intent, either positive or negative, of the other individual. The two characteristics mentioned correspond to the basic two dimensions of the SCM model, brand warmth and brand competence (Fiske et al., 2002).

Combining different levels of warmth and competence yields different competence-warmth combinations. The four different combinations can be linked to four distinct emotions which are pity, envy, admiration and contempt (Fiske et al., 2002). Based on the assessment of the two dimensions, the previously mentioned four emotions result in a specific behavioural response (Malone & Fiske, 2013). Firstly, individuals which are perceived as warm and competent are admired and people are attracted to them. Secondly, individuals or groups perceived as cold and competent are envied by others, setting the ground for a potential sabotage due to jealousy. Thirdly, the ones viewed as warm and incompetent are pitied and shown sympathy, resulting in displays of patronising help and social neglect. Lastly, the ones who are viewed as cold and incompetent elicit feelings of contempt and disgust and result in being avoided and rejected by the other members of the society. An adaptation of these relationships between the combinations of dimensions and emotional and behavioural responses are presented in Figure 4.

*Figure 4: The warmth and competence model*



*Source: Adapted from Malone & Fiske (2013)*

SCM framework has been used to explain perceptions people have about other individuals and groups (Fiske et al., 2002), different countries (Chattalas & Takada, 2013) and brands (Kervyn et al., 2012) which is covered in following Chapter 4.2.1.

The same model presented can be applied in the field of marketing when researching the relationships between people and brands. When considering brands, warmth indicates how

friendly, trustworthy and caring a brand is perceived to be. On the other hand, competence indicates the level of perceived ability, efficiency, and reliability a brand has in the eyes of a consumer. Fiske's model implies that warmth and competence together shape the emotional and behavioural responses consumers will have in relation to brands, which later reflects in purchase and customer loyalty. In this context, people view companies and brands as individuals acting with intention and volition (Malone & Fiske, 2013). However, warmth is viewed in literature as the primary dimension of social perception and represents an initial assessment which helps to determine the intentions of others. Competence only becomes relevant once the intentions of others are deemed as non-threatening. The roots of this process of evaluation can be found in the evolution, where people primarily assessed others in regards to being a potential threat or not (Fiske et al., 2007).

#### 4.2.1 Brands as Intentional Agents Framework

With a purpose of adapting the SCM to brands, Brands as Intentional Agents Framework (BIAF) has been developed. The two dimensions of warmth and competence have been respectively replaced with intentions and ability with the goal of providing a better interpretation when talking about brand perception (Kervyn et al., 2012). Individuals in general form perception of a certain brand through the brand's product packaging, quality, other people's experiences as well as their own first-hand experience (Malone & Fiske, 2013).

Based on the research in this field, different categories of brands have been linked to various emotional responses by individuals. Popular brands elicited higher admiration, troubled brands elicited higher contempt, luxury brands elicited higher envy and subsidized brands elicited higher pity scores, all of the mentioned in comparison to the average. If talking about the automotive industry, luxury brands such as Mercedes, Porsche and Rolls-Royce are viewed as popular brands. These brands elicit feelings of envy and jealousy, as they score high on the ability score and low on the intentions score (Malone & Fiske, 2013).

A clear relationship can be observed between brand stereotypes and the benefits or values of owning an item. Research has found that brand competence enhances functional value, in which case these brands communicate the utilitarian benefits and their capacity for functional performance. On the other hand, brand warmth positively impacts both perceived functional and emotional value (Kolbl et al., 2020). This relationship will be investigated as part of the research in this thesis, with the goal of finding out if there are differences between the brand stereotypes and the purchase intentions of consumers, as brand competence and warmth enhance the consumers' perceptions of brand value (Kolbl et al., 2020).

#### 4.2.2 Different applications of the SCM

The relationship between brand stereotypes and perceived brand globalness and localness can be observed in several researches conducted in the field of marketing. Brands which are perceived as global brands are attributed with high level of brand competence, while the ones which are perceived as local brands were found to be related to high levels of brand warmth (Davvetas & Halkias, 2019). The level of perceived brand localness and the level of brand globalness have different effects on brand attitudes and consequently purchase intentions, where it has been found that perceived brand localness has a stronger influence on both in comparison to globalness (Diamantopoulos et al., 2016). Brands which are perceived as global brands require to be complemented with warmth-related information, with the goal of forming longer-term relationships with their consumers, as a high level of competence can have negative effects on the brand perception (Davvetas & Halkias, 2019).

The concept of brand stereotypes is also linked in literature and practice with the perceptions tied with the country of origin where the brand originates from. The two stereotyping models are completely independent concepts from each other. However, they influence one another and are interconnected by content transfer from the country to the brand. A country's warmth or competence will only be spilled-over to the brand's warmth or competence in a certain amount (Diamantopoulos et al., 2012). Also, companies should be cautious when managing their brand efforts, as there are instances when the brand is viewed as more competent than its country of origin.

Other research suggests also that there is a connection between the warmth and competence dimensions on one side, and hedonic and utilitarian properties of certain products (Chattalas & Takada, 2013). The higher the warmth perception of a country is the greater are the expectations of hedonic properties of a product. And the more a country is perceived as competent, the greater are the expectations of utilitarian properties of a product. Findings like this one can help countries position their products on the global market to meet the expectations of the global consumers. Relationship between the brands perceived as local and global, and the brand warmth and competence has also been researched (Kolbl et al., 2019). The findings suggest that the consumers in developing countries seem to judge brands perceived as global on both warmth and competence dimensions, in comparison to consumers in developed countries where the global brands are nothing new or special.

Consumer identification with the brand is also one of the important concepts linked with the brand warmth and brand competence dimensions. Brands which are perceived as both warm and competent promote stronger identification, loyalty, and positive consumer attitudes (Stokburger-Sauer et al., 2012). In the same way, consumers have been found to be more likely to express their warmth by advocating and endorsing brands which they perceive warm rather than competent (Bernritter, 2015).

As an example of stereotypes, Italians are perceived by the people from the USA as low on competence but high on warmth, while the Germans have been perceived as high on competence and low on warmth scale (Fiske, 2018). Certain attitudes towards different brands are quite stable across different regions and continents. According to another research, car brands which originate from Japan and Germany were evaluated high on categories such as prestige, design, workmanship and the level of innovation. In contrast, automotive brand from China and the United States are perceived as quite low across the same categories (Qasem & Baharun, 2012).

## **5 RESEARCH METHODOLOGY: EXPLORING THE RELATIONSHIP BETWEEN PERCEIVED ANTHROPOMORPHISM AND BRAND STEREOTYPES**

In this chapter I will firstly present the purpose of this research and in which ways can the results have a scientific and societal impact. Together with the research questions, a brief introduction and reasoning behind this research is then concluded. Other sections in this chapter describe the method I chose for this research, characteristics of the sample, research instruments used and the data collection process. In the final part of this chapter I will reflect on the data analysis method used and the characteristics of it, as well as the illustration of the research methods diagram, which is presented in Figure 7.

### **5.1 Research purpose and research questions**

Purpose of the research and the thesis is to better understand the consumer attitudes and behaviour when it comes to the product design in the automotive industry and difference in perception of automotive brands. Different factors influence the consumers when it comes to buying cars, therefore it is beneficial to investigate in which way the companies could potentially use the findings of this research to better understand the underlying reasons for the attitudes towards different brands and car designs. Previous research in this field has investigated product anthropomorphism and brand stereotypes in separate studies. Based on the subject of this thesis and the complexity of the researched psychological concepts, the most appropriate method of research I have decided to use is the qualitative research method. Due to the complexity of the psychological constructs such as perception and customer attitudes, quantitative methods are not appropriate to start with due to the lack of in-depth understanding of the people and their hidden motives and attitudes. Importance of brands plays an important role in all of the stages a customer goes through when deciding on which product or service to purchase. The symbolic function is especially important when it comes to purchase of a new car, where consumers often associate status, prestige and personality with the type of car they drive (Mick & Oswald, 2006).

Purpose of this research is to provide evidence that a relationship between these two concepts exists and to set the ground for future research in this field.

Based on the previously mentioned purpose of the research four research questions emerged. The following are:

Question 1: Do consumers perceive the car fronts as human faces and which emotions do they attribute to them based on the design of the vehicle?

Question 2: Which automotive brands are perceived as warm and which are perceived as competent?

Question 3: Are the “aggressive” looking cars associated with the brands perceived as warm or with the brands perceived as competent?

Question 4: Are the “friendly” looking cars associated with the brands perceived as warm or with the brands perceived as competent?

First research question is based on the previous research conducted on anthropomorphism, where it was found that people perceive car fronts as human faces. An aspect which was understudied was the one concerning the emotions which are perceived on different shaped car fronts.

The second research question aims to provide findings on the reasoning behind why certain automotive brands are viewed as warm and friendly, and other as intelligent and competent. A substantial amount of research and literature already covers the concept of stereotypes in relation to different cultures, countries and brands. However, none of the research up to this day has provided explanation on why do some people stereotype about automotive brands in a certain way and what is the relationship between the perception of the brand, countries they come from and the appearance of the product.

Third and fourth research questions link together the two concepts of anthropomorphism and brand stereotypes. In-depth interviews conducted with the respondents should provide the answer to these questions and potentially provide other researchers with an incentive to further investigate the nature of this relationship and possible implications it has for different companies.

## **5.2 Sample**

Taking into account the availability of different tools for qualitative research, I have decided to conduct the research for my thesis with the use of in-depth interviews, organised in a one-on-one manner. Total of six individually held interviews were conducted as a part of the qualitative research. Three respondents were male and three were female with the goal of gaining equal insights from both genders. For this research, I

chose a sample of individuals belonging to the same generation, close in age and coming from the similar backgrounds. All of the respondents were born between the years 1994 and 1996, therefore belonging to the Generation Y, known as the “Millenials” (Cambridge Dictionary, n.d.).

The main criterion for choosing the respondents was the fact if they have passed their driver’s exam and have driven a car at least once. Additionally, all of the respondents originally come from different countries which are part of the same region in Europe. One respondent comes from Bosnia and Herzegovina, one respondent comes from Macedonia, one from Slovenia and three are from Serbia. The aim of such sampling was to investigate if there are any common beliefs or shared attitudes towards the brands and design, which could originate from shared values in their respective cultures and societies. The difference in the respondents which was taken into consideration when forming the sample and when conducting the data analysis was the gender. The gender differences will as well be presented in the results chapter, together with other findings. Sample demographics are presented in the Table 2 below. The last column indicates the date when the interview with each of the participants took place.

*Table 2: Sample Demographics and dates of interviews*

Participant ID	Gender	Age	Country	Car ownership	Date
P1	Female	28	Slovenia	Yes	25.03.2024
P2	Female	28	Bosnia & Herzegovina	No	27.03.2024
P3	Male	29	Macedonia	Yes	02.04.2024
P4	Male	29	Serbia	No	08.04.2024
P5	Male	29	Serbia	Yes	21.04.2024
P6	Female	29	Serbia	Yes	20.05.2024

*Source: Own work*

### **5.3 Data collection**

Research method which I chose for data collection in my research was semi-structured in-depth interviews. In-depth interviews were chosen considering the fact that questions are complex and the order and logic of questioning needed to be flexible.

Semi-structured interviews allow the researcher to adjust the questions with the goal of gaining deeper insights and receiving clarification regarding certain issues which arise

during the interview process, as well as to seek follow-up information (Leedy & Ormrod, 2020). That is where one of the main differences between quantitative and qualitative research lies and that is the strength of correlation between the interviewer and the data which is being collected (Williams, 2007). The interviews were conducted in a 1-on-1 manner, in a quiet public space. The interviews lasted from 45 minutes up to 1 hour. The exact dates when the interviews were held can be found in Table 2, in previous Chapter 5.2. All of the respondents were asked at the beginning for their consent for the use of their answers for research in this master thesis. After the respondents have given their consent, the interviews started. As the interviews were semi-structures, an interview guide was used as a simple guide through three different themes. The details regarding the interview guide can be found in subchapter 5.4.1.

## **5.4 Research instruments**

The nature of qualitative research requires different instruments to aid in the process of conducting the research and later on in analysing the results. One of the main instruments when it comes to in-depth interviews and qualitative research is the researcher itself (Tracy, 2019). The researcher absorbs and interprets the world through the interviews. Having this in mind, I was well-prepared and focused prior to conducting each interview. Besides the researcher certain instruments are used to better facilitate the research and analysis of the results. In my research, interview guide was created to stimulate the discussion and guide the participants through different topics in a predetermined sequence, while the audio device was used to capture the whole conversations and eliminate the need of taking notes from the beginning up until the end of each interview.

### **5.4.1 Interview guide**

The interview guide contains three different groups of questions, each related to a certain topic from the research. The first section of the interview guide contains questions related to the brands from the automotive industry, focusing on the brand stereotypes and attitudes of the respondents towards different automotive brands. The first question with which I started all six of the interviews was: “Which brand first comes to your mind when you think about cars?” The purpose of this question was to find out if there are any similarities or patterns in the respondents’ answers. Additionally, top-of-the-mind awareness was investigated while also simultaneously priming the respondents for the following research. The second section of the questions was related to product anthropomorphism and its relationship with the two chosen brands for this research, BMW and Fiat. The third and final section of the interview questions were of demographic nature, with the goal of gaining deeper insights into the respondents’ lifestyle and experiences with driving the car. Each of the sections contains multiple questions on the same topic in order to check the participants’ consistency in their answers on the same topic and subsequently the reliability of the interview findings.



#### 5.4.2 Audio recordings

All of the interviews were held onsite and were guided by the questions and sequencing of the questions defined in the interview guide. Before the start of each interview I asked the respondents for their consent, both for the use of their answers in my master thesis as well as for the audio recording of the interview. The interviews were recorded with the aid of audio device, having in mind that the voices are audible and that the technology functions correctly (Tracy, 2019). Audio device was tested prior to start of each interview and was checked two times during the interviews, to ensure uninterrupted audio recording. The audio was recorded with the use of Voice Memos mobile application on an iOS mobile device iPhone 12. The interviews were recorded from the very beginning, without any pause in the recordings. In this way all of the reactions, words and emotional tone were captured from the participants' responses. After each interview I wrote down a couple of keynotes related to the facial expressions and body movements, which I then analysed together with the interview transcription.

#### 5.4.3 Visual stimuli: reasoning and adaptation

Having in mind the methods used in this research I have come up with an additional instrument to be used together with the interview guide during the interviews. The purpose of adding a visual material was to enable the respondents to give their answers based on an image presented before them, as well as to ask them to circle certain parts of an image. Images were retrieved from the internet, based on their appropriateness for the research and image quality. First image of the Fiat model 500 was retrieved from a Dutch short-term rentals website (Shortlease Nederland, 2022). The second image of the BWM model was retrieved from the official BMW website (BMW AG, 2024). Third and final image was retrieved from an automotive website (Automotive News Europe, 2022), with the goal of providing a neutral background for both models to be placed on. The original three images are presented in Figure 5.

*Figure 5: Original unedited images*



*Source: Adapted from BMW (2024), Shortlease Nederland (2022) and Automotive News Europe (2022)*

Firstly, Fiat's model 500 was chosen based on findings from previous research conducted in the field of automotive styling and perceptions. It has been found that round headlights and smooth profile of the vehicle contribute to the perception of a car as being cute and emotional (Chen et al., 2007). Fiat 500 as a passenger vehicle possesses both the round headlights and a smooth, round shape of its car body. Additionally, Fiat as a brand has been chosen based on the findings that the Italians are often perceived by other nations as being low on competence, but high on warmth when stereotypes are being considered (Fiske, 2018). Fiat 500 falls into the mini cars market when looking at Fiat's car model portfolio (Statista, 2023).

Secondly, BMW 5-series model has been chosen as a contrast to the Fiat's model. The sharp lines and the rectangular headlights have been perceived as least cute (Chen et al., 2007) and the design of the BMW's 5-series car has often been perceived as being angry-looking (Landwehr et al., 2011). In contrast to the perception of Italians, Germans have been found to be perceived high on the competence, and low on warmth (Fiske, 2018). The car model chosen from BMW belongs to the category of executive cars (Statista, 2023).

Several necessary modifications were made to the images with the use of Adobe Photoshop. In this paragraph I will briefly explain what these modifications were and what

the reasoning was behind. With the goal of isolating the elements anthropomorphised on cars (Landwehr et al., 2011), I edited the images retrieved from the internet in Adobe Photoshop. The background on both images was altered in a way that both vehicles were placed in the same environment. Additionally, colour of both vehicles was modified to an off-white colour with the aim of cancelling out the effect the colour could have on the perception of the vehicles. Lastly, the registration plates were altered so they look as neutral as possible, with no visible country origin markings indicating where the cars come from. The origin of the registration plates has been modified in order to cancel out the influence of the country where the car on the image potentially originates from. Final edited image of the two car models can be seen in Figure 6. The images below were presented to the participants at height of 14cm and width of 9cm.

*Figure 6: Edited image for the use in the interviews*



*Source: Own work*

## **5.5 Data analysis using Thematic Analysis**

Results from the conducted interviews were analysed with the help of thematic analysis, as one of the methods of analysis which can be used in the field of qualitative research. The previously mentioned method is used for identifying and analysing patterns of meaning in forms of themes in qualitative data (Clarke & Braun, 2014). Thematic analysis is one of the most widely used methods for data analysis in qualitative research, however relatively under acknowledged. Thematic Analysis is mostly viewed in literature as the method of data analysis which is not regarded as an alternative to other methods, but rather as guidance on how to combine different approaches to qualitative data analysis (Flick, 2014).

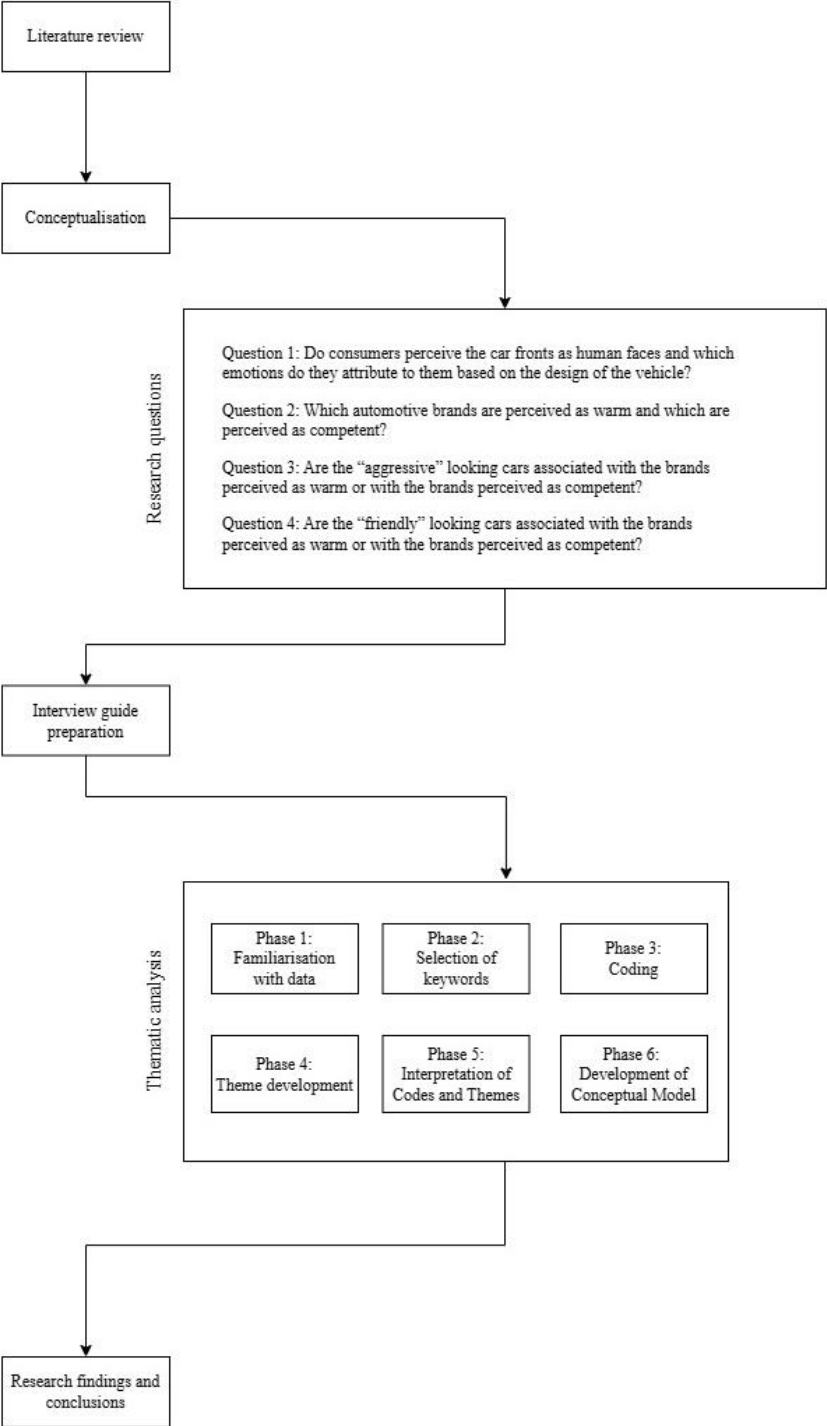
The analysis itself consists of six phases, where the process itself is regarded as recursive (Braun & Clarke, 2006), meaning that the researcher goes back and forth through all of the phases, depending of the difficulty and complexity of the research questions. Taking all the characteristics of qualitative research into account, the analysis itself can be regarded as a time consuming and detail oriented process. Concepts such as anthropomorphism and brand stereotypes both lack the appropriate scales or instruments which can be used for exact measurements and also require deeper understanding of the consumers' underlying attitudes and beliefs. Additionally, in-depth interviews have an advantage in situations when the questions are complex or open-ended, or where the logic and the order of questioning may need to be changed, with the goal of extracting as many insights from the respondents as possible (Saunders et al, 2015). Therefore, in-depth interviews followed by the thematic analysis were used in this research.

Thematic analysis is a method used for analysing qualitative data. The nature of the research topic in this thesis requires deeper investigation and search for common beliefs and shared meanings between all six respondents. With all the positive and negative sides taken into consideration, Thematic Analysis is an appropriate method for this type of data analysis. The analysis was carried out following the six-step process (Kiger & Varpio, 2020). The six-step process was not conducted in a straight line manner but rather in a form of feedback loop, where all the six steps are being revisited until all the necessary information has been analysed and presented. The six-step process of thematic analysis is presented in an adapted form for the purpose of this thesis in Figure 8 (Naeem et al., 2023), as part of the whole research methods diagram.

Once carefully listened to, transcribed and edited, the interview responses were then reread thoroughly multiple times and main keywords were marked. Based on the marked keywords in the original transcripts codes were generated for the marked keywords. The codes are represented with one word or a combination of several words. In process of coding an inductive approach (Byrne, 2022) was utilised where the codes were produced from the data which was given by the respondents. There were no predetermined coding frames which were followed during the generation of codes. The detailed overview of the transcripts and the codes can be found in the Appendix 4. In this example, both semantic and latent coding was utilised. Semantic coding is based on the explicit meanings and descriptions provided by the respondents, whereas latent coding investigates the deeper meaning behind the words and answers which were not explicitly said by the respondents (Byrne, 2022). Both mentioned approaches were utilised in the same extent, with no attempt to prioritise one over the other. The interviewed individuals were quite open and relaxed during the interviews, while the questions were clear and focused on specific fields of interest. The codes and the transcripts were reread multiple times and edited until the final seven themes were generated as the result, each providing several insights for the research questions proposed at the beginning of the research. The themes which I generated from the transcripts and codes can together be found in Appendix 12.

The whole research process is visually depicted in the Figure 7, which represents the methods diagram which I followed.

Figure 7: Research methods diagram



Source: Own work

## **6 RESULTS**

In this section I will present the results of the conducted Thematic Analysis. The main themes which emerged from generated codes as the result of this research will be presented in separate subchapters with the goal of clear representation. I will briefly touch upon the codes and important sections from the interview transcripts.

### **6.1 Theme 1: Personal experience serve as a base for top-of-mind awareness**

The first question I asked the participants at the beginning of all of the six interviews was: “Which brand first comes to your mind when you think of cars?” This question has been formulated in a way to investigate the top-of-mind awareness and to prime the respondents for the interview itself.

Three out of six respondents have chosen a car brand which they currently own or their parents owned. The Respondent 3 and Respondent 5 mentioned Mercedes as the first brand which came to their mind. As previously covered in Chapter 4, top-of-mind awareness or TOMA is an important factor and represents the highest quality awareness a brand can have. In this research possible previous experience such as childhood memories, upbringing or current ownership could be the reason behind the brands which were mentioned by the participants. Only one brand has been mentioned by two different male respondents and that was Mercedes. None of the two respondents ever owned a Mercedes, which demonstrates the strength and recognition Mercedes has among the population. Respondent 2 has mentioned Ferrari as the car brand which came to their mind.

The answers to the first question are equally distributed, as half of the respondents mentioned a brand based on their personal experience, while the other half mentioned the two brands which are regarded as one of the top European car brands, with their passenger vehicle models belonging to the more high-priced segments of premium (Mercedes) and niche/sports cars (Ferrari).

### **6.2 Theme 2: Cars are compared to people**

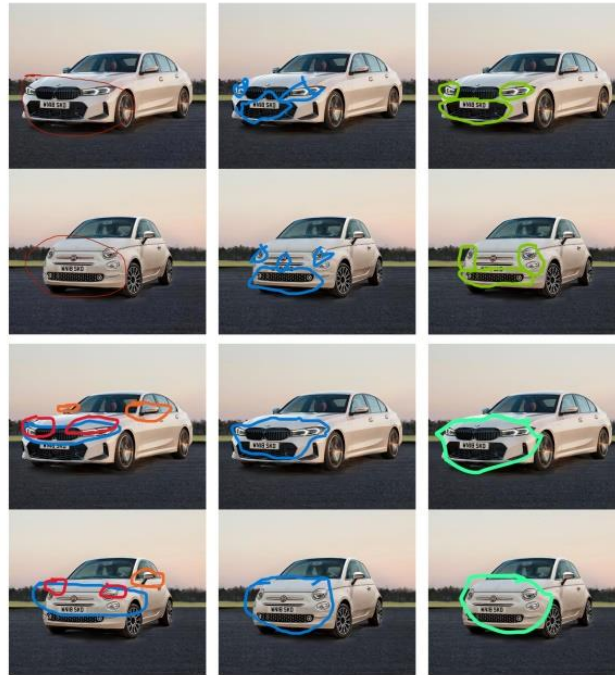
During the interviews every phrase was carefully analysed and taken into consideration. Respondents used phrases which represent examples of anthropomorphism. It was observed that the respondents were using anthropomorphic phrases before they were even asked questions about their anthropomorphic tendencies. This was apparent in comparison of cars to different people and using phrases such as “a car hugs you” and “car as a friend” are all situations which occur in human-to-human interactions (Kniazeva & Belk, 2010). As the non-human objects are not able to give hugs or act as a friend; therefore the respondents were anthropomorphising without being asked about it directly. Respondent 1 also mentioned that she used to call their family car “Redzha”, which is also an example

where a nickname was given to a non-human object in the same way it would have been given to a human. Respondent 5 has demonstrated a substantial level of anthropomorphism by using different phrases such as: “They hug you, when you sit in the French car he hugs you and you feel comfortable” and “if he doesn’t betray you, he is good.”

### **6.3 Theme 3: Car fronts as human faces**

All of the interviewed individuals have confirmed that they can see a human face when looking at the front part of the car. This corresponds to the literature when it comes to viewing the headlights as eyes, grille as the mouth and half of the respondents said that they can even point out the side mirrors as the ears (Aggarwal & McGill, 2007; Landwehr et al., 2011). However, the first thing all the respondents first mentioned about the car front were the headlights as eyes, which was also found in the research that it is the element on the car at which people look at first, just as the eyes of the human face are what people are drawn to first based on eye-tracking experiments conducted (Windhager, et al., 2010). Interviewee 5 has mentioned during the interview that the new headlight designed by the French manufacturer Peugeot look like fangs, which adds another factor. Interviewee 4 has mentioned as well that he does not like the new trend which he notices when it comes to the design of headlights, where the size and the width of the headlight has been narrowed down. By doing this, the cars are losing one of the main elements which aids people in perceiving the car front as a human face and those are the headlights. This could be a potential topic for future research, to investigate if the consumers’ perception of car fronts as human faces and the general likeability of cars is potentially influenced by the shape of headlights, as it is a trend present in the last couple of years. All six images where the respondents circled sections of car fronts which resemble a human face are presented in Figure 8.

*Figure 8: Results from the respondents for the visual stimuli*



*Source: Own work*

#### **6.4 Theme 4: Safety and total cost of ownership more important than car design**

When presented with different factors of influence on a potential purchase of a new car, none of the respondents placed design of the car as the most important factor, which corresponds with the previous research and consumer behaviour statistics in regards to buying a new car. When presented with choice between the two European brands, Fiat and BMW, all of the respondents confirmed that their choice would be to purchase a BMW, as it stands for a safe and comfortable car of German origin, giving importance to the factor of influence known as the country of origin (Diamantopoulos et al., 2012). This is related to the previous research where it has been found that the third on scale of importance is the quality reflected in safety and security of the vehicle itself (Laurence & Macharis, 2008). The first factors are related to the price and cost of ownership. However, it has been found that in practice people often overlook these factors in favour of prestige and status they could gain by owning a certain brand (Candelo, 2019).

#### **6.5 Theme 5: Seeing faces in non-human objects**

All six of the individuals have said that at some point during their life they have seen a human face in a non-human object. When asked the questions, female respondents reacted quickly and gave affirmative answer to the question, while male respondents took a bit more time to give the answer. This confirms the findings in previous research and literature, where women more easily see faces in different non-human objects in



comparison to men (Hoback, 2018; Proverbio, 2017). All of the respondents recalled events when they saw a human face, where the distance and distribution of the elements corresponded with a human face, with two parallel elements representing the eyes, and the wider element below reminding them of mouth. This alignment of different elements on an object can be explained using the Gestalt principle, where the emphasis is not on individual component, but rather on a whole as covered in Chapter 3.5.2. Respondents 2 and 4 have explicitly pointed out that the orientation, placement and distance between the headlight and the grille influences their perception of car fronts as human faces. The two mentioned respondents used phrases such as “it's just some pattern that you see probably on some subconscious level” and “, it is because of the shape and the orientation of the headlights.” Other four respondents were not sure what the reason behind this was, even though they were conscious of the anthropomorphism they demonstrated.

## **6.6 Theme 6: Friendly looking cars belong to warm brands**

All of the six individuals interviewed were asked two separate questions regarding the brand stereotypes and anthropomorphism. Respondent 1 has pointed out that the Fiat 500 is in her opinion the best example of a car with a human face, cute eyes and round headlights. At the same time, she has described Fiat as a warm brand and BMW as competent brand. When asked the same questions regarding the brands, all of the other five respondents have chosen Fiat as a warm brand and BMW as a competent brand. When it comes to perception of friendliness of the car design, Respondent 2 has said that Fiat looks like a cute, little car. Respondent 3 has pointed out the roundness of the Fiat 500, as well as Respondent 4 who also said that Fiat looks happier. During the interview transcription and analysis I have found that there was a tendency among female respondents to describe Fiat 500 as a cute, happy and friendly car, while the male respondents pointed out the shape, roundness and would use the terms such as “women’s car”. Primary finding under this theme is that all of the respondents who perceived the car front of Fiat 500 as a friendly face at the same time described Fiat brand a warm and sincere one. Secondary finding is that the women tended to use more frequently emotions and adjectives to describe models of cars, while men focused more on the shape and lines of the car model.

## **6.7 Theme 7: Aggressive looking cars belong to competent brands**

As already mentioned in the result from Theme 6, all of the respondents described BMW as being an intelligent and competent brand. When it comes to car design I came to the same conclusion as for the description of Fiat 500. Most of the male respondents described BMW model using terms such as that it has a distinctive line, angled headlights, sharp lines and looks manlier. Respondent 4 said that he preferred the design of BMW models, as they look sportier and more attractive. On the other hand female respondents highlighted the emotions and personalities they perceived when looking at the BMW model. It is also worth mentioning that the Respondent 3 has directly related the brand stereotypes and car

friendliness or aggressiveness without the need of me asking the question. To conclude this theme, I have found that all of the six respondents perceived BMWs as angry looking, while at the same time describing BMW as being intelligent and competent.

## **6.8 Theme 8: Asian brands and Tesla perceived as competent, European as warm**

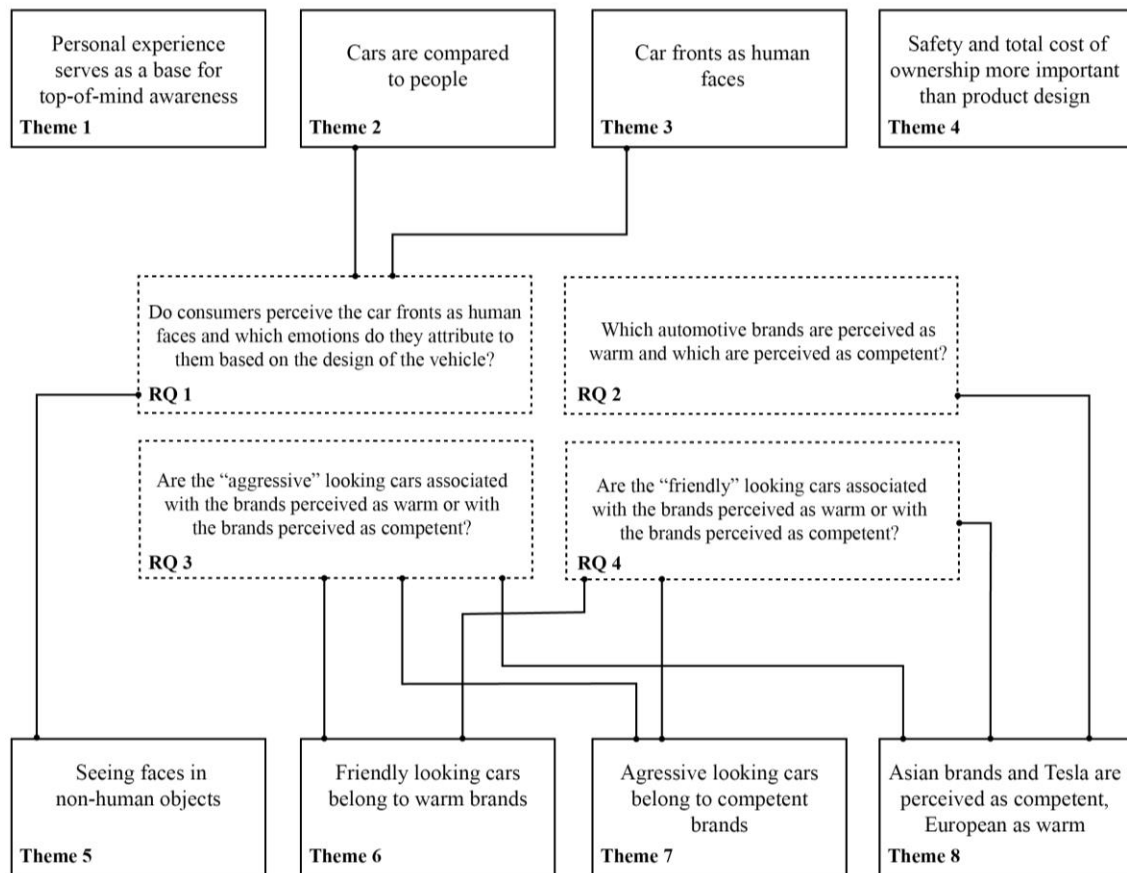
All of the respondents were asked to name one warm and sincere brand, and one intelligent and competent in their opinion. Respondent 1 has chosen Renault as a warm brand, as it used to be a family car during her childhood. Renault was chosen as a warm brand by the Respondents 3 and 4. Respondent 5 has said that he sees French brands as being warm and that they ‘hug you’. All four respondents were unsure why they chose Renault as a warm brand. Respondent 1 has said that the factor of influence in her answer was that Renault is a national, state-owned and family oriented company. Renault’s company history states that it started as a family owned company, which grew into a big concern and was later nationalised in 1945 by the French state (Robson, 1950).

Interestingly, Respondent 5 has mentioned that Fiat is trying to be a warm brand based on the news he heard about their plan to offer only lively coloured cars, without black, silver and white coloured models. From this we can see that the colour of the vehicles and the company’s policy towards more colourful cars is seen an attempt made by Fiat to be a warm and sincere brand. On the other hand Respondent 6 has linked the design of a specific car model to the warmth of the whole brand. She said that Nissan is a warm brand, since their model Nissan Qashqai looks warm and friendly to her. Based on the answers of these two respondents, I can assume that the car design together with the colour can have a strong influence on the perception of the brand as a whole. In contrast to this theme, Respondent 2 has chosen Toyota as a warm brand as it was a brand which was also a car brand which her family owned when she was a child.

Tesla as an EV brand and Asian manufacturers such as Kia and Hyundai have been labelled as being competent and intelligent. None of the respondents said that they would like to own a Tesla, even though they perceive it as a competent brand. Respondent 5 has linked the brand competence with the safety of a car naming Volvo as a competent brand. Volvo is known as a pioneer in safety inventions and technological advancements, which is why the perception of it as being competent and intelligent can be justified.

All of the eight previously discussed themes in this research have been formed based on the findings from the six interviews conducted. Six of the themes can be directly linked to the research questions which served as the starting point in this research. Only two of them, Theme 1 and Theme 4 are not related to the research questions, however I find them beneficial as they offers additional insights on the different elements which influence the consumers. The correlation between the research questions and the themes is presented in Figure 9.

Figure 9: Links between research questions and themes



Source: Own work

## 7 DISCUSSION

Themes which emerged from the research conducted were presented separately in the previous section, together with the findings from the interviews. The following section serves as a final presentation of findings from the research and their link to the previous research conducted. Certain points which emerged from this research offer support for several different directions for future research on relationship between anthropomorphism and brand stereotypes. I will cover several findings from this research which are not key for the purpose of this thesis, but might offer certain insights for other researchers interested in deeper investigation of these issues.

It has been found that the design of the car is not the most important factor for purchasing the vehicle. However, respondents in all six interviews were quite specific when it comes to elements they like and dislike when it comes to exterior car design. All respondents view car fronts as human faces and the first element of a human face which they relate are the headlights as human eyes. This is related to the previous research conducted, where it has been found based on eye tracking that headlights are considered as eyes, grille as the nose, grille or the additional air intake as the mouth, and finally side-view mirror as ears (Windhager, et al., 2010). Respondents 2 and 3 were the only ones who pointed out at the side-view mirrors as ears, while all six have said that the headlights look as human eyes. This further strengthens the effect the headlights have on individuals. Another interesting findings related to the headlights are the trends which were noticed by the respondents. Two out of six respondents have pointed out that they don't like the look of the modern shaped headlights, where the previously round or angle shaped headlights are being now replaced with very thin rectangles, almost resembling simple lines. These findings can have a positive effect, as it has been previously confirmed that products which had a happy, angry or surprised configurations elicited deeper exploration and captured greater attention (Noble et al., 2023).

The respondents have also displayed clear preferences for the design of BMW model. The two car models used in this research can be viewed also from the perspective of perceived dominance of the product faces on both car models. BMW has been seen as a more dominant faced car than Fiat 500, which could be the reason why the respondents preferred the design of the BMW. Also, it has been previously found that people tend to prefer more dominants product faces in contrast to human faces, where the opposite occurs (Maeng & Aggarwal, 2018). Similarly, the respondents demonstrated tendency to perceive Fiat 500 as a women's car, with round-shape while at the same time perceiving Fiat as a warm and sincere brand. On the other hand, BMW was described by the respondents as a car driven by aggressive people who do not follow the rules and tend to display their dominance on the road. In contrast to Fiat, the respondents perceived BMW as more intelligent and competent.

All of the respondents have noticed that they are more likely to anthropomorphise when they are in a relaxed mood and not in a hurry or a stressful situation. This was closely related to the free time they have and the lack of worries or absence of certain obligations which needed to be done. This confirms that the tendency to anthropomorphise varies within an individual, where different emotional states and situations they are in influence the extent to which they will tend to anthropomorphise non-human objects (Shannon, 1948; Wodehouse et al., 2018).

When discussing stereotypes linked to owners of certain car brands, the male respondents view the owners of Fiat 500 as being predominantly female. Also, four out of six respondents, independent of their gender, perceive the owners of BMW cars as being arrogant, aggressive and rude drivers. Respondents 5 and 6 pointed out that they would not want to own a BMW as they would be seen in the same way as they perceive those same owners. This confirms the previous findings where the consumers see themselves similar to the owners of the same brand and very different from the owners of another car brand (Grubb & Hupp, 1968). This finding potentially influences the purchase intentions of consumers, as they would not want to be seen in a negative way.

## **7.1 Theoretical and practical implications**

When discussing implications this research has on the practice and theory, it is worth stating that the scope and general applicability of the research is limited due to the nature of research methods used and the size of the sample. The conducted in-depth interviews and the sample of six respondents serve more as groundwork for further both qualitative and quantitative research. However, there are several possible implications which are worth mentioning.

When discussing theory and research in this field, findings from this research serve as a starting point for further analysis. It was found that a relationship between product anthropomorphism and brand stereotypes exists. This research can serve as a base for constructing a more quantitative oriented research or experiments where the nature of this relationship can be further investigated.

For management and companies, both anthropomorphism and brand stereotypes play a great role in their marketing strategies. Depending on their needs and desires, consumer will choose the brand which will most likely satisfy them. Cars as complex products require more time and effort to evaluate the alternatives. When contemplating the purchase of a new car, it was found that most men are potentially attracted to the more dominant and aggressive looking cars, while women preferred the cars with round shape and soft lines, which they perceived as friendly. Having that in mind, companies can based on the assessment of their different car models create more differentiated and in-depth strategies for each of the models, instead of solely focusing primarily on the brand. Different

designed cars attract different segments, where in some cases brand does not play a crucial role in the final decisions made.

The potential issue which was pointed out by the respondents during the interviews is the design of the new headlights on new models from multiple brands. The respondents displayed dislike towards the new designs, as the headlights were no longer that attractive to them. This can serve as a starting point for companies and their products designers to investigate if these changes have an impact on consumers and to which extent could it influence potential future product consideration and purchases. No official research papers have been found on this subject.

## **7.2 Limitations**

Every research regardless of its nature and instruments used has certain limitations. One of the limitations when it comes to this research is reflected in taking into consideration product anthropomorphism. As previously mentioned in the literature review, anthropomorphism can be viewed from the product and from the brand perspective. In this research I focused solely on product anthropomorphism, where design of the car fronts was taken into consideration. The extent to which the brand anthropomorphism of Fiat and BMW affected the answers provided by the participants remains unknown.

Second closely related limitation of the research is related to the differentiation made in literature between the consumer perceived anthropomorphism and marketing intended brand anthropomorphism. Consumer perception of a product, in this case a passenger car, was rated in relation to the extent in which each participant anthropomorphised certain car models. When the company communicates anthropomorphic characteristics or features, it has better control over what the expected result of that process should be. In this research, participants were asked about their perception of the car fronts based on the findings from previous research in this area.

Another limitation of the research is linked to the sample. The possibility of selection bias cannot be completely ruled out, as the participants were selected from my personal social contacts. Even though the interviews were conducted in a professional manner, the extent to which the interviews were biased remains unknown.

The car models chosen for this research differentiate among themselves in different aspects. The most dominant factor of differentiation is the size of the selected car models. BMW chosen for this research belongs to the category of executive cars (Statista, 2023), while on the other hand Fiat 500 belongs to the mini-car category of vehicles (Statista, 2023). Even though the purpose of this research was to lay the groundwork for the more in-depth research in the future, the mentioned limitation cannot be disregarded. Size of the car has been a factor which could have had a certain impact on the responses from the participants, as the car models belong to two different vehicle categories.

Lastly, one of the main limitations of this research is the lack of possibility for generalisation which is a direct result of the choice of research method used. In-depth interviews and the total number of six participants cannot offer possible applications for the whole population. However, one of the main qualities of this research is that it has set firm ground for future research in this field, with potential use of quantitative research methods and large samples from whose results wider conclusions about the general public can be made.

### **7.3 Future research**

There are many opportunities for more in-depth research to be performed in this field. The literature which covers both product anthropomorphism and brand stereotypes is quite scarce. Research findings from this research show that a link exists between the two and that further qualitative and quantitative research should be conducted in order to gain more general and applicable results. In this section I will mention several suggestions where the research in this field can be further performed.

As I previously mentioned in the limitations of this research, the link between the two concepts remains unclear. The potential for future research lies in investigating if and in which way would a change in design affect the perceived brand stereotypes. In other words, to investigate if changing the design of BMW passenger cars towards a more “friendly-faced” design would have any effect on the perceived competence of BMW as a brand and vice versa, if changing the design of Fiat passenger cars towards a more “angry-faced” design would have any effects on the perceived friendliness of Fiat as a brand.

Another element which could potentially be the subject of future research are the headlights. As the eyes are the main element on a human face which draws immediate attention, it would be interesting to investigate if the reduced appearance of headlights as human eyes has any effect on the perceived attractiveness of different vehicles. Four out of six respondents have raised their concerns when it comes to headlight design in newer car models, where the trend of reducing the height of the headlights affects the appearance negatively in regards to perceiving them as human eyes. It would be beneficial for the companies and product designers to investigate if the changes in the design of headlights have an impact on the overall positive or negative perception of the car design.

Additionally, it would be interesting to investigate how the influence of childhood memories affects the perception of different brands as being either warm or competent. In this research, several participants have rated the car brand which their parents owned when they were young as being warm. How do the memories from early childhood influence their perception of car brands as adults and in which way do the positive or negative emotions differ in the way individuals as adults rate brands as being warm and friendly, or competent and intelligent.

Lastly, as found in previous research, individuals are more likely to see male human faces in product faces. It would be beneficial to find out if the individuals of both genders see a male or female face on the car fronts. In this way, companies can have a much better understanding and adjust the positioning of their certain brands or models in order to fit in with the customer expectations.

## **8 CONCLUSION**

The purpose of this research is to explore in which way people relate the aggressiveness or friendliness of the car design with the perceived brand warmth and brand competence. It has been formed as an exploratory study intended to lay the groundwork for further in-depth research studies in the future and to point out to several new areas where other research could potentially be conducted. The qualitative nature of the research has enabled collection of deeper consumer insights and potential hidden attitudes.

Based on the results which were obtained from the interviews' analysis a certain relationship was found between the two concepts. Respondents clearly communicated their attitudes towards the two chosen brands and their respective car models. Each of the respondents perceived BMW as a competent and intelligent brand, while at the same time perceiving the design of the BMW vehicle as aggressive. On the other hand, Fiat as a brand was perceived as a warm and friendly brand as well by each of the respondents while the design of the car was perceived as a friendly, cute and child-like. With this a firm ground has been set for future research. This has opened a new opportunity for a more detailed isolation of different factors and possibility to investigate what is the nature of this relationship. A couple of potential reasons could be behind the choices made by the respondents in this research. Potential ones are the country from where the vehicle manufacturer originates from, the exterior design of a vehicle or consumer stereotypes associated with these brands.

Even though regarded as an error in human perception by some researchers and theoreticians, anthropomorphism does influence the perception and choice people make. Whether the companies are deliberately using anthropomorphism as part of their marketing efforts or the consumers perceive certain products and brands as being humanlike, it affects the perception and liking in comparison to non-anthropomorphised objects, in most cases having a greater positive influence. However, it should be used with caution as it can have certain negative outcomes on the behaviour and perception of brands and products. Women were found to be more open to demonstrating this tendency openly in contrast to men. Therefore certain gender difference should be taken into consideration when developing marketing strategies or planning research in this field.



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## **APPENDICES**





## **Appendix 1: Povzetek (Summary in Slovene language)**

Namen tega dela je raziskati odnos med zaznanim antropomorfizmom v osebnih vozilih ter zaznana toplino in kompetentnostjo blagovne znamke pri blagovnih znakah v avtomobilski industriji. Po eni strani raziskuje, ali potrošniki dojemajo sprednje strani avtomobilov kot človeške obraze in jih povezujejo z določenimi čustvi. Po drugi strani pa, ali dojemajo videz avtomobilov kot „agresivne“ za tiste avtomobile, ki jih proizvajajo kompetentne znamke, in kot „prijazen“ za tiste avtomobile, ki jih proizvajajo tople znamke. Koncept „prijaznega“ in „agresivnega“ videza avtomobilov je bil predmet predhodne raziskave (Landwehr et al., 2011). Ugotovljeno je bilo, da določeni položaj in oblike žarometov in sprednje rešetke odražajo vsakega od teh videzov. Prav tako ljudje določene oblike avtomobila opisujejo kot prijazne ali agresivne.

Vendar pa nobena od prejšnjih raziskav ni preučevala razmerja med tema dvema pojmom. Zaradi omejenega števila virov in teorij o obeh konceptih je bila potrebna bolj poglobljena raziskava, da bi razumeli, kateri dejavniki vplivajo na dojetje sprednjih delov avtomobilov kot človeških obrazov, katere znamke so zaznane kot tople in kompetentne. Pregled literature v tej magistrski nalogi ponuja podroben vpogled v več področij. Najprej so zajete splošne značilnosti avtomobilске industrije, koncepti oblikovanja avtomobilov, avtomobilskih znamk in vedenja potrošnikov pri obravnavi uporabe in nakupa osebnih vozil. Drugič, koncept antropomorfizma je predstavljen s poudarkom na teoriji SEEK (Epley et al., 2007), ki je ena redkih kompleksnih in podrobnih teorij o antropomorfizmu. Tudi različne vrste in oblike antropomorfizma pomagajo razlikovati situacije, v katerih se ta napaka pojavlja. Tretjič, predstavljen je koncept stereotipov o blagovnih znamkah, ki temelji na modelih SCM (Fiske et al., 2007) in BIAS (Kervyn et al., 2012), ter pomen blagovnih znamk v avtomobilski industriji, saj vplivajo na potrošnike in njihova stališča.

Raziskava s kombinacijo pregleda literature in kvalitativne raziskave omogoča vpogled v potrošnikovo dojetje oblikovanja in blagovnih znamk osebnih vozil. Opravljenih je bilo šest polstrukturiranih poglobljenih intervjujev s tremi moškimi in tremi ženskami. Začetnemu prepisu intervjujev je sledila Tematska Analiza, kjer so prepisi služili kot izhodišče za nadaljnje oblikovanje kod in končni razvoj tem. Na podlagi intervjujev je bilo razvitih skupno šest tem. Tema 1 odraža spoznanja, ki so bila pridobljena s prvim zastavljenim vprašanjem, in se nanaša na top-of-mind awareness. Polovica anketirancev je omenila znamko na podlagi osebnih izkušenj, druga polovica pa je omenila dve znamki, ki veljata za eni od najboljših evropskih avtomobilskih znamk (premium in nišnih): Mercedes in Ferrari, kar kaže na visoko raven pozicioniranja v zavesti potrošnikov. Tema 2 opisuje težnjo anketirancev, da avtomobile opisujejo kot ljudi z uporabo besednih zvez, kot sta „avto kot prijatelj“ in „avto te objame“. Podobno, tema 3 obravnava koncept antropomorfizma, saj je vseh šest anketirancev navedlo, da sprednji deli avtomobilov spominjajo na človeški obraz z žarometi kot očmi in rešetko kot usti. Tema 4 na kratko obravnava pomembnost različnih dejavnikov pri izbiri znamke avtomobila, pri čemer sta varnost in skupni stroški lastništva za vseh šest anketirancev pomembnejša od oblike

avtomobila. Splošna nagnjenost k antropomorfizaciji je zajeta v temi 5, saj so vsi anketiranci potrdili, da poleg avtomobilov vidijo človeške obraze tudi v drugih nečloveških predmetih, kot so škatle, oblaki, gospodinjski aparati in električne vtičnice. Tema 6 in tema 7 dajeta odgovor na raziskovalni vprašanj, ki sta bili zastavljeni na začetku te raziskave. Vsi anketiranci, ki so sprednji del avtomobila Fiat 500 zaznali kot prijazen obraz, so hkrati znamko Fiat opisali kot toplo in iskreno. Po drugi strani sem ugotovil, da je vseh šest anketirancev avtomobile BMW dojemalo kot da so jeznega videza, hkrati pa so BMW opisali kot inteligenten in kompetenten brend. Nazadnje tema 8 na kratko ponuja nekaj spoznanj, ki niso neposredno povezana z raziskovalnimi vprašanji. Anketiranci so evropske avtomobilске znamke ponavadi opisovali kot bolj tople, medtem ko so proizvajalca električnih vozil Tesla in azijske avtomobilске znamke dojemali kot visoko kompetentne.

Čeprav je ta raziskava bolj podlaga za nadaljnje poglobljene raziskave, lahko izpostavimo nekaj implikacij za prakso. Dva od šestih anketirancev sta kot trend izpostavila določeno obliko žarometov, ki je prisotna v zadnjih nekaj letih. Oba sta navedla, da novi žarometi niso videti privlačni, in podvomila v njihovo funkcionalnost. Ta stališča lahko služijo kot izhodišče za podjetja, da nadalje preučijo odnos potrošnikov do nove oblike žarometov in jih ustrezno spremenijo, če v vzorcu prevladujejo negativna stališča. Poleg tega bi lahko ugotovitve te raziskave podjetjem pomagale pri morebitnem nadaljnjem razlikovanju pozicioniranja njihovih izdelkov in komunikacijske strategije, saj bi lahko obstajalo še več segmentov, na katere bi lahko ciljali s še bolj osredotočenimi sporočili. Pri razmišljanju o prihodnjih raziskavah bi bila z vidika splošne uporabnosti koristna uporaba kvantitativnih raziskovalnih metod, večjih vzorcev in merilnih lestvic. Prav tako bi lahko z uporabo dveh modelov avtomobilov, ki spadata v isto kategorijo, še bolj izolirali odnos med zaznanim antropomorfizmom in stereotipi o blagovni znamki. Ker spomini iz otroštva močno vplivajo na zavedanje o blagovni znamki, bi bilo koristno to dodatno raziskati, saj bi to podjetja lahko izkoristila v svojo korist.

## Appendix 2: UNECE and NCAP passenger car classifications

Passenger car categories	Category	Definition
Based on UNECE standards	M	Power-driven vehicles having at least four wheels and used for the carriage of passengers
	M1	Vehicles used for the carriage of passengers and comprising not more than eight seats in addition to the driver's seat.
	M2	Vehicles used for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass not exceeding 5 tonnes.
	M3	Vehicles used for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tonnes.

Euro NCAP classification	Segment
As defined by the European New Car Assessment Programme	Business and Family Van
	Executive
	Large Family Car
	Large MPV
	Large Off-Road
	Pick-up

## Appendix 3: Interview guide

### INTERVIEW GUIDE

*Student: Julijana Avramov*

The total planned number of interviews amounts to six. Six different individuals aged from 28-30 will be participating. Three male and three female respondents will be selected, with the goal of examining if there are any differences in the extent in which people of different gender anthropomorphise. A research conducted in the past has come to conclusion that women anthropomorphise more than men. The same age group will be maintained throughout the interviews and possible survey using questionnaire. The participants for the interviews will be chosen based on the fact if they are drivers and if they own a car. Reason for this is due to the fact that they have more frequent interaction with their car, they experience malfunctioning more often and they can answer questions related to which factors are important to them and why, how much do they value design, what type of design they prefer on a car, how do they differentiate between the brands, and many other deeper related to anthropomorphism and brand stereotypes. The main point of differentiation will be gender, with the goal of gaining a deeper understanding of the differences between the male and female respondents when it comes to anthropomorphism

*Dear interviewee,*

*Thank you for taking your time to contribute to my Master Thesis. The main topic of this interview will be your customer experiences with passenger cars. You will also be presented with different printed images of different car models for which I would kindly ask for your feedback.*

*Your identity will not be disclosed in the Thesis and the data provided during this interview will be used exclusively for my research. I will record the interview just in order to ease the process of writing a transcript that will be attached at the Appendix part of the written work if you provide your consent. The interview should not take longer than 60 minutes.*

#### Section 1 – Usage of cars and the attitudes towards the brands

- Which brand first come to your mind when you think of cars?
- If you could imagine brands being people, name an automotive brand for which you would say is a sincere and warm brand, and one which is competent and intelligent? What are the reasons behind this choice? (brand image, customer experience, design of the car, country of origin)
- In which way would you describe the difference between BMW and Fiat, as two European manufacturers of passenger vehicles?
- If you would have to choose between BMW and Fiat, which one would you choose to purchase and why? Imagine as if the technical features of both were equal.

## Section 2 – Tendencies to anthropomorphise

- Which of the two designs do you find more appealing design wise? Which elements do you favour more on the preferred model (headlights, grille, side doors, and wheels)?
- On the picture presented before you, please circle the part of the car front which reminds you of a human face? Could you be able to link these elements of the car fronts to specific elements of a human face?
- What do you think affects your perception of the front part of the car as a human face?

## Final section - Demographic questions (potential use in the survey later)

- Are you familiar with the human tendency to interpret objects with human characteristics?
- How do you feel about this human tendency?
- Can you describe a certain object which you described using human characteristics and emotions?
- Can you recall in which situation did you apply this tendency?
- Do you find that you express this human tendency more or less in different moods (when you are angry, happy, sad, lonely)?
- How long have you been driving a car and how often do you drive it weekly/monthly?
- Would you consider yourself a good driver of a car?
- Which factors were important to you when choosing a car and why?
- How important is the design of the car (size, colour, shape of the headlights, front grille, side mirrors, and windscreen)?
- How often do you drive a car?
- On which occasions and for what purpose do you use a car?

Reasoning behind selection of car models: BMW and Fiat have been taken based on assumptions public has about both the brands and the countries they come from. BMW 5 is often regarded as a sporty, aggressive and fast looking car. On the other hand, Fiat 500 has been seen as a happy and friendly faced car, based on the research of the headlights and grill previously conducted in the area of anthropomorphism and car design. In addition, companies and brands coming from Germany are seen by the public as “competent”, while the Italian brands are viewed as more “friendly”. The selected images of the two brands for the purpose of conducting the interviews have been modestly modified with the goal of better isolation of the specific elements of the car design which are focus of this thesis. Other aspects irrelevant to this research have been neutralised by standardisation i.e. the colours of the cars have been modified so they do not differ, the background has been changed and the same one has been inserted.

#### Appendix 4: Interview guide and coding

Interview 1 transcript	
Questions and responses	Coding
INTERVIEWER: What would you say were the factors which influenced your decision when you were choosing a car to purchase?	
PARTICIPANT 1: The first factor of influence was that the car was safe to drive for <b>longer distance</b> , <b>low consumption</b> and that the engine is strong enough. Those were the top three reasons. I can also add the <b>future costs of a car</b> , like repairs, registration, insurance and related. When it comes to the design, we decided that we wanted to buy a <b>SUV</b> car. Colour was also what we discussed, but we agreed both in the end that we would like to have a black car, more elegant and classy than let's say white.	Longer distance driving, Low consumption, Costs of car ownership, rise of SUVs
INTERVIEWER: How important are the exterior design elements to you in general?	
PARTICIPANT 1: I prefer newer models which don't have <b>big grills</b> , as they look more elegant and not too much metal parts. A car model which I would choose based on the design would be VW Beetle or something similar in shape. The newer <b>Kia</b> Stonic has a good looking car front and back, the lines are quite soft and the car is more round.	Grill, Round shape, Volkswagen, Kia, Less metal parts
INTERVIEWER: How often do you drive your car and on which occasions?	
PARTICIPANT 1: I usually don't drive that often, my boyfriend drives more frequently when we are together. But when I am alone, I usually use it for grocery shopping, or going to Ljubljana by myself. Mostly shorter distances.	City ride, A to B, Short distance trips
INTERVIEWER: How do you differentiate between different car brands?	
PARTICIPANT 1: I inherited from my family some common beliefs that German cars are the best, but lately I have changed my opinion regarding this. Asian manufacturers are quite trending and of high quality, while I think that some German cars are a bit overpriced.	Family inherited beliefs, Country stereotypes, Asian manufacturers, German industry
INTERVIEWER: But if the prices were let's say the same, would you still choose Asian over European manufacturers?	
PARTICIPANT 1: Well if that was the case, then I think I would definitely choose European brand. Maybe VW for example.	Volkswagen, European brands
INTERVIEWER: When you think of car brands, which car brand comes to your mind?	
PARTICIPANT 1: Kia. Kia takes the number one spot since we own a <b>Kia</b> and that's the reason why it was the first brand which came to my mind.	Car brand owned
INTERVIEWER: How would you explain the differences between two European car brands, BMW and Fiat?	
PARTICIPANT 1: In my head BMW is more reliable, a car which you can drive for longer periods of time, is more secure for driving and in general more safe.	Safe and reliable German car, BMW, long distance trips

INTERVIEWER: What do you think that influences that opinion?	
PARTICIPANT 1: Mostly I base it on the experience of others and so called Word of Mouth, things we heard from others as we haven't owned either of them. Maybe the history of the German industry also kind of influenced it. I think that Italians have sportier, nicely designed high class cars, while Germans have more reliable cars for wider population.	Other people's experience, German industry, Italian design
INTERVIEWER: And if you could imagine that BMW and Fiat models have the same technical features and same level of reliability, which of the two would you choose?	
PARTICIPANT 1: Probably I would choose Fiat because Italians have more interesting designed cars opposed to Germans, who have more standardised and similar looking models. Fiat 500 would be the choice as it has more subtle lines and is a cute car for me.	Italian design superior to German, Round shape Italian cars
INTERVIEWER: Alright, that's interesting. Great. If you could imagine brands being people, name an automotive brand for which you would say is a sincere and warm brand/person, and one which is competent and intelligent. So I would say the first one is sincere and warm.	
PARTICIPANT 1: Renault would be the car which I would choose as sincere and warm, since it was a car which we had in our family during my childhood. Renault is a family car brand, has some traditional family oriented values. I call Renault informally "Redzha" and it's cute ha-ha. Renault has a long traditional, state owned car company in France.	Renault, Family and childhood memories, French traditional brand
INTERVIEWER: And the other brands, intelligent and competent?	
PARTICIPANT 1: Hyundai.	Hyundai
INTERVIEWER: Why?	
PARTICIPANT 1: They are technically intelligent. I believe that Asian brands and manufacturers are always related to technology, inventions and future.	Asian manufacturers, Innovation oriented manufacturing
INTERVIEWER: I will present you with two images and would kindly ask you to tell me which of the two designs you prefer and why?	
PARTICIPANT 1: Well I would choose Fiat 500. In general I don't like longer models of cars, the hood is too long. I prefer more compact cars, which are higher and shorter, such as SUVs. The rough elements on the BMW are not appealing to me, more subtle and elegant design is what I prefer. The headlights on Fiat 500 are cute. But I have to admit that the headlights on the BMW are also an element I like, the shape of them and they give an impression of a fast car. Fiat is simply put a cute car.	Round shaped car models, Cute car, Round shaped headlights
INTERVIEWER: Any other elements?	
PARTICIPANT 1: Rear view windows are also one of the items. I prefer for them to stand out and to be also nicely designed, and not too hidden. That is what I also prefer on the Fiat's model.	Fiat
INTERVIEWER: Are you familiar with anthropomorphism and can you name me some objects with which has this happened to you?	
PARTICIPANT 1: Yes, it did happen with cars. Fiat 500 is a typical example with those round shaped headlights. It gives us an	Fiat, Human face, Round shaped

impression of a human face. Especially when some people buy and put the fake lashed for those cars, which even more enhances the human like shape.	headlights
INTERVIEWER: Do they only look like a human face or you could attach a certain emotion to it?	
PARTICIPANT 1: Yes, I usually see them as a happy face or an angry face for example.	Angry/happy
INTERVIEWER: Does this happen to you when you are in certain moods or situations, can you specify it?	
PARTICIPANT 1: I must focus on the car, since I usually don't notice them too much, but it happens for example when we are driving on the motorway. Also sometimes in the nature I can see these shapes. So mostly it happens when I am relaxed and am enjoying myself, that's when I notice things around me in more details, I am more aware.	Driving in the car, Relaxed state of mind, Human faces in nature
INTERVIEWER: I would like to ask you to circle the certain parts of these cars in which you can see a human face?	
PARTICIPANT 1: Well I would say that this part is eyes, mouth and eyes also. For the first car I would say he looks a bit angry, because of the shape of his grill.	Grill, Angry
INTERVIEWER: And if you would have to describe Fiat and BMW brands as being intelligent and competent, or warm and friendly, how which of the attributes would you choose for both?	
PARTICIPANT 1: That is not a hard choice. I would describe Fiat as being warm and friendly, while BMW is intelligent and competent.	Fiat warm, BMW competent
<b>Interview 2 transcript</b>	
INTERVIEWER: Which brand first comes to your mind when you think of cars?	
PARTICIPANT 2: Ferrari, because I think it's like a dream for many people. It's a dream car. I don't have a dream car because I am not too interested in cars and I wouldn't have a specific goal in my life in a way that I would say that I achieved something when I buy my dream car. Maybe what is a status car and I think is cool and comfortable is Range Rover. I like these SUVs	Ferrari, Italian design, SUVs, Concept of having a dream car, Life goals in form of a car
INTERVIEWER: If you could imagine brands being people, name an automotive brand for which you would say is a sincere and warm brand/person, and one which is competent and intelligent. So I would say the first one is sincere and warm.	
PARTICIPANT 2: Toyota.	Toyota, Asian manufacturers
INTERVIEWER: And competent and intelligent?	
PARTICIPANT 2: Intelligent I would say Tesla, but for both I wouldn't put Tesla.	Tesla, Electric vehicles (*intelligent but not competent)
INTERVIEWER: But which brand would you name if you would have to use both traits?	
PARTICIPANT 2: Let me think... Ok, I am going with high end cars. But maybe.. No, let's say again Range Rover, why not? Land Rover, Range Rover.	Range Rover



INTERVIEWER: What do you think were the reasons behind your choices of these brands?	
PARTICIPANT 2: First one, Toyota, is because my parents had it and this was the car which we had when we were growing up and with which we travelled to Croatia, we also did European tour, 20 000km in one year which is not the best car but it was safe and we felt safe and comfortable.	Toyota, Family and childhood memories, Asian manufacturers
For Range Rover, I know that Queen Elizabeth was always in that car and it is not a sports car which a lot of new rich people, who chase some kind of status, will drive. It's something that has probably the real value, comfort and it is also good looking.	Sports cars as status symbol,
INTERVIEWER: Do you think that the country where these brands come from influence your choice?	
PARTICIPANT 2: Hmm it was also part of my choice, I was thinking of some German cars or similar, that it would be safer, and maybe Italian that is different, better designed. But it didn't influence too much my decision	
INTERVIEWER: So you chose Toyota mostly based on your past experience and some memories you have with it and your family?	
PARTICIPANT 2: Yes, yes.	
INTERVIEWER: In which way would you describe the difference between BMW and Fiat as two European manufacturers of passenger vehicles? You can take everything into consideration.	
PARTICIPANT 2: I think it has to be related to people who drive them. BMW are driven by people who are maybe more proactive, more offensive drivers and people who maybe are chasing something in a sense status, money. It is not to go from point A to point B, but to enjoy the drive. And Fiat is more just a vehicle, transport which enables you to be mobile.	Consumer stereotypes, Driving as pleasure
INTERVIEWER: If you would have to choose between BMW and Fiat, which one would you choose to buy and why?	
PARTICIPANT 2: BMW.	
INTERVIEWER: But let's say that all of the technical features are the same.	
PARTICIPANT 2: Depends in which country I live. If I would live in Balkan country, it would probably be Fiat. In any other country, I don't think that I can actually dismiss these differences which are already in my head. But now since I know these differences, I would probably choose BMW.	
INTERVIEWER: Which design between the two brands do you prefer?	
PARTICIPANT 2: I don't know many models of Fiat. I know the Fiat 500, which I think is cute. But for me for example Fiat Panda, which we have at home, is not good looking and it is not comfortable. Any of the other models I don't find that pretty. Also Fiat has the model which was voted as one of the ugliest cars.	Fiat 500, Cute car
INTERVIEWER: You mean Fiat Multipla?	
PARTICIPANT 2: Yes. When I think of Fiat only an image of a cute little car comes to my mind and not that safe. BMW is safe, comfortable and good looking.	Cute car, Safety and comfort of German cars

INTERVIEWER: Ok. Now I will show you two images and I will ask you to choose which do you prefer?	
PARTICIPANT 2: Yes, the upper one.	
INTERVIEWER: Alright. Why do you think you chose the first one?	
PARTICIPANT 2: Because memory of the car below (Fiat 500) is linked to when I was driving with my friend in Sarajevo. I really liked the design of the car but she told me that she had an accident and that her car flipped over. And I also had a few drives in BMW with some friends and I felt safe and comfortable, which made the ride enjoyable. So in many aspects it is better.	Safety, Other people's experience
INTERVIEWER: Ok, great. Thank you. I will now ask you to circle parts of these two cars, which remind you of a human face.	
PARTICIPANT 2: Ok... These are eyes. This is mouth. Yes, only these two. If I would overthink maybe I would something else, like ears or something similar. On the other car in the second image we have eyes here, mouth and also nose. And I often think about this resemblance.	Human face on car fronts
<i>The part of the question which was related to naming the specific elements was already answered by the interviewee.</i>	
INTERVIEWER: What do you think affects your perception of the front part of the car as a human face?	Consumer stereotypes
PARTICIPANT 2: I don't know, it's just some pattern that you see probably on some subconscious level. The distance between eyes and that there is something which is located below. Also it could be ears. When I said that if I could overthink, this upper part could be ears but. Also the blinkers and the light that comes from the headlights.	Gestalt principle, Headlights as eyes
INTERVIEWER: Are you familiar in general with this tendency to interpret different object like human faces, does it happen to you?	
PARTICIPANT 2: Yes.	
INTERVIEWER: For which items can you recall that this has happened to you?	
PARTICIPANT 2: Recently, 20 days ago I saw a strange human face on a shaving machine from my boyfriend. I told him about it and he said that he cannot see the face. So yes, it happens from time to time. I don't know what else... It's more some order of things or sometimes in the sky I can see a face	Household appliance, Gestalt principle, Pareidolia in nature, Men don't see human faces
INTERVIEWER: Do you think your mood or emotions affect this?	
PARTICIPANT 2: Probably yes. When I am more relaxed I tend to more observe things around me and find something human in it, when I am not stressed or anxious.	Relaxed and observing, Human faces
INTERVIEWER: On which occasions do you drive car?	
PARTICIPANT 2: I don't drive much in the last few years. Also I live in a small city where everything is approachable by feet, bike or bus. Also the cost of the car would not be justified for this current living situation.	Developed public transport, No need for a car, Cost of car ownership
INTERVIEWER: How important is the design of the car to you?	
PARTICIPANT 2: If you asked me 2 year ago, I would say I really don't care but I spent some time with a guy that likes cars I started to appreciate good design, appearance, quality, and comfort inside, speakers. Yes, everything. Now I would care a bit more definitely.	Influenced by other people, Shift in attitudes towards car ownership with age

INTERVIEWER: Would you say that the choice between BMW and Fiat was in any way influenced by the country they come from as brands?	
PARTICIPANT 2: So BMW is from Germany, and Fiat is from Italy right? I think Germany is a bit boring and they are more functionally oriented and not too focused on design in general.	German industry know-how, Dull German car design
INTERVIEWER: Alright. And if you would have to put these two brands in any of the two categories which we mentioned at the beginning (warm/sincere and intelligent/competent), how would you place them?	
PARTICIPANT 2: Fiat is warm and BMW is competent.	Fiat, BMW
INTERVIEWER: Great, thank you for taking your time to participate in this interview. This was my last question.	
<b>Interview 3 transcript</b>	
INTERVIEWER: Which brand first comes to your mind when you think of cars?	
PARTICIPANT 3: Mercedes.	
INTERVIEWER: Why does it stand out from the other brands?	
PARTICIPANT 3: Because the brand sounds a snobbish a bit, ha-ha. It is a well-known brand and it is equivalent to the quality also. I've been inside of all new cars, all of that I sat and driven or was driven in, those are the ones that feel the most comfortable and I like how it feels when you are inside of Mercedes. The infotainment is also very special and unique.	Status symbol, Comfort
INTERVIEWER: Did you drive it?	
PARTICIPANT 3: Well no, I was just at the salon. We were actually visiting the museum of Mercedes and it has all of the history and everything. At the end of the tour there was a showroom of the newest cars and that was amazing. You go from one car to the other and every other one is better than the previous one.	Visited museum
INTERVIEWER: Was it the regular models or the sports one?	
PARTICIPANT 3: I don't like sports models, I like more luxurious ones. With leather seats and enough space inside. It doesn't necessarily need to be a big car but more the feeling of being inside and having more space for you.	Leather seats, Not a big car
INTERVIEWER: So you think more of an ergonomic construction inside?	Ergonomic
PARTICIPANT 3: Yes, exactly.	
INTERVIEWER: Alright, got it. Thank you. If you could imagine brands being people, can you name an automotive brand which you would describe as a sincere and warm brand, and also another brand for which you would say is an intelligent and competent?	
PARTICIPANT 3: Out of any brands?	
INTERVIEWER: Yes, automotive brands. So the first is warm and sincere.	
PARTICIPANT 3: Hmm. That would be like some kind of a minivan, family kind of a car. I don't know. I wouldn't pick VW, that is also maybe a bit snobbish, as well as Mercedes. Maybe like a	Minivan stereotype

Renault.	
INTERVIEWER: And the other should be intelligent and competent?	
PARTICIPANT 3: Well that's Porsche for sure.	
INTERVIEWER: If you would have to explain why, would you know to say which of the factors influenced the choices of these brands, Renault and Porsche.	
PARTICIPANT 3: Because one model popped to my head. It's the old, like a minivan type of a car. Scenic if I am not mistaken. And it's a big and wide family car. When it comes to Porsche, it is probably because the engineering is at a top level. Lately I've been exploring those cars a bit and doing some research. I don't want to own a Porsche, but I would like to have it for a day or week. Having that type of car is a chore, but having it for a weekend and enjoying it is what I would do. It is performance simply, I imagine that you would sit down and whatever you do it is going to adjust to you.	Renault, Don't want to own a Porsche, Maintenance of the car, Latent anthropomorphism (you sit and the car adjusts to you, does whatever you want)
INTERVIEWER: Would you say that maybe the countries where they come from influenced the choices you made for those two brands?	
PARTICIPANT 3: No, I don't associate France with warmth ha-ha. So I would say in general it did not influence my choices.	
INTERVIEWER: Alright, I understand. Now I chose two brands for the next part of the interview. Fiat and BMW. What would you say, in which aspect do the two differ?	
PARTICIPANT 3: BMW cars are well known in the streets as cars with "crazy drivers" and without the use of blinkers ha-ha. The stereotype. But I mean, I wouldn't necessarily have neither of those. If I were to have one of the two, I would go with the BMW. However, I wouldn't want to be looked at as one of the typical drivers of the BMW. Fiat I would compare with let's say Seat as well. They look good on the outside but once when I was exploring the car for myself, I saw how it looks on the inside, the interior. It looked very strange on the inside, a bit awkward. Fiat also gives me the same feeling, there is nothing appealing. Apart from maybe one model, Fiat Tipo, it's a hatchback. That one looks ok from the inside.	BMW drivers stereotype, Don't want to be placed in a stereotype group,
INTERVIEWER: Yes, that is one of the bigger Fiat models.	
PARTICIPANT 3: Yes, yes. If anything from Fiat, I would have the Fiat 500 model, but I don't know if I could fit inside. Apart from that, it's ok. It is small and also has a back seat and has luggage area, compared to the much smaller Smart car.	Spacious and comfortable
INTERVIEWER: If you would have to describe the two brands with the adjectives from the beginning of the interview, which one would you describe with which set of words?	
PARTICIPANT 3: Yes, I would say Fiat is warm and sincere, while BMW is intelligent and competent of course. Fiat has all the curves and everything, and BMW looks angry. Just looking at the car from the back and also the front. Especially from the front I would say.	Fiat and BMW brand stereotypes based on looks
INTERVIEWER: Ok. So you based this decision mostly based on the looks of the car?	
PARTICIPANT 3: Yes, that's right. But in the previous question, that wasn't the case.	

INTERVIEWER: Great, thank you. Now I will present you with two images and I will ask you to circle certain parts on those images. These are the two models. I would like to ask you to circle if there are certain parts which you think resemble a human face.	
PARTICIPANT 3: A human face?	
INTERVIEWER: Yes, on both of the images.	
PARTICIPANT 3: So the whole thing here (point at the front top front part of the car). These are like the eyes (circles the headlights) and then the ears (circles the rear view mirrors). They really look like ears when you think about it. This is not mouth (point to the lower grill of the car). And also these curves here are the eyebrows, on the top and they make the facial expression.	Human face
INTERVIEWER: So you already said that if you had to choose you would choose BMW. Can you just give me a couple of reasons why you chose BMW over Fiat?	
PARTICIPANT 3: Because it would be more comfortable. And I would say also a bit more reliable I suppose. I mean maybe Italians produce good cars, but not Fiat I would say. If its long distance I would chose the BMW, but if it's a city ride you don't need such a big car to move around. You can't even find parking for starters.	Long vs. short distance, lack of parking space
INTERVIEWER: So it would be more for going around the city if you would choose, and BMW for long distance?	
PARTICIPANT 3: Yes, that's right.	
INTERVIEWER: Alright. So you said you can point out eyes, ears and eyebrows from the car fronts?	
PARTICIPANT 3: Yes yes.	
INTERVIEWER: Does this happen often to you?	
PARTICIPANT 3: Yes, especially when I drive. And what bothers me now with the new cars like Hyndai, the newer models, they have lines. Similar as the new BMW. Because they are so thin, I am not even sure they can do their function properly. It doesn't make it a face anymore. Also new Opel Astra has similar headlights. I am not sure why they do this.	Decrease of the width of the new headlights
INTERVIEWER: Ok. Do you notice specific brands having specific facial expressions on their models?	
PARTICIPANT 3: I mean I do know that they have this signature look, right? And even with the new headlights and everything, for the BMWs for example, they do have that signature BMW "thing" and not the logo. I don't necessarily classify them. I couldn't put together Škoda and VW, even though they have common part but they don't look the same to me.	
INTERVIEWER: And at the beginning you mentioned that the BMWs look as if they are angry. Is there any other brand for which you would say that most of their cars look like as if they have a specific facial expression?	
PARTICIPANT 3: Maybe some VW models, they look a bit angry, not too much. There are also some that have big eyes, like anime eyes. Mercedes, they do have these long eyes. Also I had a conversation a few days ago with a colleague at work. She mentioned that a certain model of Porsche has specific feature when looked at	Anime eyes, Aerial view of the car

from a certain angle, as if they look like teardrops.	
INTERVIEWER: That's interesting. Alright. And can you sometimes see human faces in some other objects, except cars? Like shape, emotions, anything.	
PARTICIPANT 3: Yes, I think that everybody does.	
INTERVIEWER: Can you name or describe some of those objects?	
PARTICIPANT 3: Yes. For example I saw a human face on a box of wine. The mouth was the opening with the tap from where you pour the wine out, and then you have two eyes on each side on the top, the two holes cut out for carrying the box. And also cheeks I can see on both sides of the tap.	Non-human objects anthropomorphised, Pareidolia
INTERVIEWER: What would you say, why does it look like a face to you?	
PARTICIPANT 3: Because it has those components. They need to be grouped together, so if it's random it wouldn't look like that anymore.	
INTERVIEWER: Ok, great. Do you think that the state of your emotions or mood influences the process of seeing human faces or not.	
PARTICIPANT 3: I've never thought about it, but let's say if I am angry or stressed I wouldn't even think about it. But if I am relaxed then probably I would notice it more.	Relaxed state of mind and emotions, No stress or anxiety
INTERVIEWER: Now shortly a couple of general questions. How long have you been driving your car and for which purpose do you use it?	
PARTICIPANT 3: I need the car for getting from point A to point B. I am maybe more of convenience driver than a pleasure driver. I wouldn't just sit in the car and go roaming around the city. That's how I also picked my car. I picked something that will be fairly reliable. The inside of the car and the infotainment it has was also sufficient at the moment of the purchase. If I had to replace the car I have at the moment, I would definitely go for something from the past 5 years. That is why I am not thinking about replacing it any time soon ha-ha.	From point A to point B
INTERVIEWER: And if you would buy a new car now, taking the budget from the equation, would you still be the convenience person and would you have a certain brand/model which you would buy.	
PARTICIPANT 3: If I were to pick a car to drive for the next 20-25 years, maybe I would invest a bit more money and invest in a Mercedes. But if I were to get a car that will be comfortable and functional, then I would go for some kind of Toyota because I know that they are fairly reliable and I would go for like a Rav4 or maybe even a Volvo. SUV probably, because I already have a hatchback and I know that it doesn't fit too many things. Especially when you go traveling with multiple people.	Toyota, Asian manufacturers, SUVs, enough space inside for both people and things
INTERVIEWER: And when it comes to car design, which elements are most important to you?	
PARTICIPANT 3: I would like for it too look nice for my eyes. It is a feeling I can't explain. My current car for example. When I first saw it, I could see myself inside of it.	

<b>Interview 4 transcript</b>	
INTERVIEWER: Which brand first comes to your mind when you think of cars?	
PARTICIPANT 4: Opel, because it is a car I have since I was a child. Opel Corsa. And simply when I think of cars it first comes to my mind as a personal connection I have with it.	Opel, Family and childhood car
INTERVIEWER: If you could imagine brands being people, name an automotive brand for which you would say is a sincere and warm brand/person, and one which is competent and intelligent. So I would say the first one is sincere and warm.	
PARTICIPANT 4: For an intelligent and competent brand I would say Audi, and for a warm and sincere brand I would say Renault. I chose Audi because... well, mostly I chose these brands based on a country from where they come from and are made, not by their design or exterior look. Maybe also based on the people who drive these car brands, or stereotypes related to them. Audi is a car known for offering different features and functionalities. I think it has very good performance. Also I connect it with the German industry and engineering. I chose Renault as a small, old basic car, nothing special. I don't even know how the new Renault models look like. I always imagine the older, small Renaults from the 90s. Also they are made in France, that it also a factor of influence for me. The choice was mostly based on the country of origin, price, and shape of the car. Renault is a much cheaper car brand than Audi	Audi competent, Warm Renault, German industry,
INTERVIEWER: And what would you say are the main differences between BMW and Fiat, as two European car manufacturers?	
PARTICIPANT 4: Fiat has more of an image of a national car brand, for wider population, while BMW is a prestige. That's where their differences lay the most. BMW has a very specific logo also, it is quite specific and I know how it looks like. On the other hand it took me a while to remember how FIAT's logo even looks like. Fiat is to me like a VW in Germany, and BMW is like a Maserati in Italy. The image of the brand is different as well as the consumers.	Fiat national car brand, BMW brand and design noticeable
INTERVIEWER: If you had to imagine that Fiat and BMW have the same performance wise cars, and you had to choose, which one would you chose?	
PARTICIPANT 4: BMW. When you are buying a car you buy the whole purchase and the image it created. Just by owning a BMW it is something special, you are not buying just a transportation vehicle but also a feeling. Even if they had the same technical performance and if the price was the same, I would still choose BWM.	BMW as a feeling
INTERVIEWER: So I have two images. I would like to ask you to look at both of the models on these images and tell me which you prefer, and which feature influences the choice you made?	
PARTICIPANT 4: The BMW looks more attractive, manlier. It has specific design, sharp lines; they stand out more than the other one. As a man I would never buy a Fiat, it looks a bit shaped like an egg. I would drive it, but I would never buy it. Otherwise it's a nice car, with solid features. BMW just looks better, sportier and that's why I prefer it.	BMW man car, soft vs. sharp lines

INTERVIEWER: And if you look at the two images, can you please point out in which sections of the car can you spot a human face?	
PARTICIPANT 4: On the front part, the headlights.	
INTERVIEWER: Please circle those parts.	
PARTICIPANT 4: Sure. Only I don't understand why the Fiat looks as it has 4 eyes instead of 2. Similar what they done to their other model, Fiat Multipla. The BMW also has eyes here, but he looks a bit angry. Fiat looks a bit happier. The grilles on both cars look like mouth. That is how I would connect these elements with a human face. But I think eyes are the most specific element and they stand out the most when compared to other parts of the car front.	* Related to eyes of human as the key objects first spotted on the face
INTERVIEWER: And what do you think affects your perception of the car front?	
PARTICIPANT 4: I never thought about this before, but I am sure that there is something behind this when the cars were designed. If I need to be more specific, it is because of the shape and the orientation of the headlights. The BMW has the more narrow and angled eyes which kind of look a bit angry looking eyes.	Headlights as eyes
INTERVIEWER: Have you ever noticed human faces and attributed emotions to non-human objects? Has that ever happened to you before?	
PARTICIPANT 4: Yes yes, I remember that I had a bag for my bike which had certain elements that kind of resembled a human face. I was preparing for a bike trip and while I was packing, I focused on the bag for a moment and noticed that it looks like a human face and it was funny.	Bag with human face
INTERVIEWER: And any other examples you heard?	
PARTICIPANT 4: Not sure if this is relevant because it is an example of an altered perception, but I heard from a friend a story about a guy which had taken some psychoactive substances and was walking down the street. He was talking to all the cars and said that they were smiling to him and winked at him, with different facial expressions. When it comes to me, I think I have noticed faces on trucks. And also there is a car I know; maybe it is the Fiat 500, where they put fake lashes on the headlight.	
INTERVIEWER: If I reflect on the previous comments you made at the beginning of our conversation, you mentioned that you differentiate between the car for men and for women. Based on what do you make this differentiation?	
PARTICIPANT 4: Well it's mostly based on the shape and the sharpness of the lines. The biggest difference is in my opinion the sharp and soft lines on the cars. I would say that the cars with sharper lines in my opinion are for men, while the cars with softer lines and round shaped ones are more for women. Opel Corsa is in that way also a women's car, while Mazda cars are a bit in between and I could say that they are a bit gender neutral.	Men vs. women cars
INTERVIEWER: And did you notice that are certain moods you are in when you see human faces on non-human objects?	
PARTICIPANT 4: Yes, definitely. I have to be fully relaxed and maybe more creative at that moment. For sure it wouldn't happen	Full relaxed state, Stressed



when I am stressed. When I have time to perceive the outer world in more details is when this would happen to me	
INTERVIEWER: And now a few general questions about your driving experience. How long have you been a driver and how often do you drive it?	
PARTICIPANT 4: I started driving 12 years ago. I don't drive it that often since I don't have one. But I drive it whenever I go home.	
INTERVIEWER: And for which occasions do you drive it?	
PARTICIPANT 4: I usually drive it daily for running some errands or if I am travelling between cities when the distance is less than 100km. Sometimes also I use a car sharing app, just for a random drive around the town.	Utility driving
INTERVIEWER: And which car would you choose to buy as your new car?	
PARTICIPANT 4: Mazda MX-5.	
INTERVIEWER: And lastly if you would have to describe Fiat and BMW as being warm and friendly, or competent and intelligent, how would you distribute the two?	
PARTICIPANT 4: Well I would definitely place Fiat as a warm brand, and BMW as the competent brand.	Fiat warm, BMW competent
INTERVIEWER: Great, that would be all. Thank you for your time and for participating in the interview.	
<b>Interview 5 transcript</b>	
INTERVIEWER: Which brand first comes to your mind when you think of cars?	
PARTICIPANT 5: I would say Mercedes. It stands for one of the most luxurious cars. They are the first brand that developed a car if I am not mistaken. In the history of the company, Daimler was the first that created a car which we know today. Of course, very different when it comes to design when compared to the cars today.	German, heritage Daimler
INTERVIEWER: If you could imagine brands as being people, can you name an automotive brand which you would describe as a sincere and warm brand, and also another brand for which you would say is an intelligent and competent?	
PARTICIPANT 5: Intelligent and competent is Volvo. They had different safety innovations from the very beginning. As I know, safety belt, airbags and many other. Volvo brand itself is a synonym for safety. In that category I could also mention Tesla as an electric car, the first autonomous vehicle, with self-driving mode, as a pioneer. In the other category, all the French brands are. They hug you, when you sit in the French car he hugs you and you feel comfortable. If he doesn't betray you, he is good. So the French brands are warm and friendly in my opinion. Also one more fun fact, related to the car world. The Italians are trying to be warm in a way that Fiat decided that they will not produce silver, bland coloured cars. They decided that they will produce only lively coloured cars. They want to colour the Italy with red, yellow, green and other fun coloured cars.	Volvo as safety pioneer, Anthropomorphising French car brands
INTERVIEWER: And if you would choose between BMW and Fiat,	

which one would you point out and what do you like about it?	
PARTICIPANT 5: I don't like BMW because it doesn't have blinkers ha-ha. I haven't been driven in many BMWs that much in my life, but it stands for speed and strength. I would probably choose BMW because it is a German car, I believe it is reliable. If you think about getting in a potential crash in future, the question you should ask yourself in which car you have a higher chance of surviving the crash. In that case, I have a feeling that I have a higher chance of surviving the crash.	German industry, Safety
INTERVIEWER: And what do you like about the design of these two cars on these two images?	
PARTICIPANT 5: The Fiat below is cute. I would have both cars. I would drive Fiat in the city, while BMW I would use for longer distance trips. It is safer in that way. The Fiat is small and easy to park in the city. Imagine parking your BMW in a crowded parking in a shopping centre and a kid opens the door next to your car and scratches your car. I like the "eyes" on the Fiat, looks very cute. But BMW has the distinctive line. But you know what? Peugeot made the headlights on their cars so they look a bit like fangs. The design of their new cars really is top class, not sure about the quality if they are good or not.	City vs. long distance cars, Headlights as eyes, Fangs on Peugeot
INTERVIEWER: Thank you, that's a new insight. Can you please tell me if you are familiar with the human tendency to interpret non-human objects using the human characteristics or emotions?	
PARTICIPANT 5: The power socket sometimes appears as a face. Whenever you can see two dots, it resembles eyes. Also when I take a shower in my bathroom, I have time to look at the tiles and the patterns sometimes resemble a human face. If there are two lines positioned diagonally, they also can look like Asian eyes. For example, a Chinese restaurant had those two lines and it looked like. Two windows and door on a house can also resemble a face, in a way that the windows can represent eyes and the door is mouth.	Power socket, Patterns on bathroom tiles,
INTERVIEWER: Can you tell me more about an example which stuck with you when it comes to this phenomenon?	
PARTICIPANT 5: Sure. I remember there was a <b>house</b> which was on the way from my house to my high school. I would look at it always from the bus and it reminded me of a human face. I can even find a picture of it on Google Maps. Look at this house, like a real face. The blinds were always on the same height and it resembled always the eyes and the entrance doors were always like mouth.	House as a face
INTERVIEWER: And would you be able to differentiate between different moods you are in when these things occur?	
PARTICIPANT 5: Well these things happen only when I am really <b>relaxed</b> . When I am in a hurry I don't even notice these things. I have other things on my mind. But when I am relaxed, then I notice these things. As I already mentioned, relaxing in the shower is one of those examples.	Relaxed mood
INTERVIEWER: And how long have you been a driver?	
PARTICIPANT 5: I have been driving car for 13 years, and I am driving it daily, multiple times during the day.	

INTERVIEWER: Would you say you are a good driver?	
PARTICIPANT 5: I consider myself a good car driver. I think that the experience and daily usage of cars will eventually turn you into a good driver. If you have no fear, there are no obstacles. So yes, I believe I am a good driver.	
INTERVIEWER: Good. And if you would have to rank different factors on the importance scale when it comes to choosing a new car, how would you do it?	
PARTICIPANT 5: Well on the first place I would put the price, as the most important factor as it is a limiting factor and it narrows down the choice of the car brands and certain models. After that I would probably put durability, as I intend to have the same car as long as possible before thinking of replacing it. Also I can put the price and availability of replacement parts. I think it is very important to own a car for which you can find the replacement parts as soon as possible and also where the price is reasonable. It just doesn't make sense to me to buy a car and then when something is wrong you have to wait a long period of time for the part, and because of that be without a car during the same period. The last two factors which I would add is the comfort of the car and lastly multimedia inside the car.	
INTERVIEWER: And how important is the design of the car (size, colour, shape of the headlights, front grille, side mirrors, and windscreen) to you?	
PARTICIPANT 5: Not that important, the main visual element is the visibility inside the car when deciding on buying one.	
INTERVIEWER: How often would you say that you drive your car?	
PARTICIPANT 5: Daily, I would say that on rare occasions a day goes by where I don't drive it all throughout the day.	
INTERVIEWER: And for what do you use your car daily?	
PARTICIPANT 5: Mostly for my <b>daily commute</b> to work, driving to visit parent, friends, and traveling. We have a parking space secured at the office where we work, so I don't think too much about it as I know I will always have a parking space waiting for me. On other occasions I really take <b>parking</b> and <b>traffic conditions</b> into consideration when choosing if I will drive my car or not.	City drive, Limited parking spaces
<b>Interview 6 transcript</b>	
INTERVIEWER: Can you please name one car brand which comes to your mind when you think of cars?	
PARTICIPANT 6: To be honest, Renault, since <b>I drive it every day</b> . At the moment that is "the car" for me. It feels more like a second home as my work is depending on me driving my car.	Brand the respondent owns
INTERVIEWER: And if you could imagine brands as being people, can you name an automotive brand which you would describe as a sincere and warm brand, and also another brand for which you would say is an intelligent and competent?	
PARTICIPANT 6: Warm and friendly? I would say Nissan Qashqai, I am not sure why. I imagine that car model as warm and friendly. For the other one I would choose Audi.	Nissan design, Audi

INTERVIEWER: Can you please now explain why chose both of those brands? What influenced your decision?	
PARTICIPANT 6: I don't know, Nissan looks cute and it is nice to drive it. It is comfortable and nice to drive; to me it seems as if you are happy when you drive it. As it's your friend. When it comes to Audi, you said intelligent and competent. It's just a strong car brand, fast and furious. Also the Audi limousines give me this impression of being competent and intelligent.	Car as a friend, Car shape as a determinant of brand stereotypes
INTERVIEWER: Yes, I understand. So you based your choices mostly on the design or the looks of both cars?	
PARTICIPANT 6: Yes, yes. Exactly.	
INTERVIEWER: What would you say that the main differences between BMW and Fiat as two European car manufacturers are in your opinion?	
PARTICIPANT 6: BMW is a synonym for quality in my opinion. It is a very good car and in general I think that people with money and not so high IQ drive it. At least that is an impression I get from being a driver and spending my days on the road. Fiat seems to me as a vehicle to get you from point A to point B. For example, the good looking Fiat 500 look cute but I would differentiate between seeing those cars in Italy and in Serbia, and the impression varies. I think that in Italy it really looks cute and nice, but not so much in Serbia.	BMW stereotypes, Fiat as city car, Cute Fiat
It is just a pity in my opinion that all BMW cars, being so high in quality and price, are usually drive by people who don't deserve it. As if they are always in the wrong hands, it just doesn't seem fair to me ha-ha.	
INTERVIEWER: And if you would have to choose to buy BMW or Fiat, what would be your choice?	
PARTICIPANT 6: I would choose BMW, so I can also be a stuck-up driver ha-ha. No really, jokes aside, I really prefer the design. I also think they are of higher quality.	
INTERVIEWER: And what do you think influenced your choices?	
PARTICIPANT 6: I think that it is not the same if the cars are produced in different countries; German car is still a German car. If I had unlimited funds and if it costs the same, I would still choose a German car in the end. It is just a belief we all grew up with and heard our parents pointing out the competence of German industry in general, especially when it comes to cars as they were always viewed as a kind of status symbol in this region of Europe.	German industry, Status symbol
INTERVIEWER: I will now present you with two images of two different car models. I would kindly ask you to rate the appearance of both and point out which elements you prefer and why?	
PARTICIPANT 6: BMW looks more attractive to me because it is a larger car. If I would drive this Fiat model, I would look like a clown as I am not a small woman. Probably it would be like in Smart, knees in my mouth. Fiat is a cute, compact city car; I can't say it is not a nice car. It's just that it doesn't go with me and my appearance and character. It has the round shape and seems gentle, while with BMW the design is better in my opinion. Or at least it better suits me. BMW looks a bit angry, and Fiat looks cute. BMW is like a serious business	Fiat is round and gentle, Fiat small child, BMW corporate businessman

person and Fiat 500 looks like a small cute child that has just learned to drive, a nice and nicely raised child.	
INTERVIEWER: You have some deep insights, thank you for that.	
PARTICIPANT 6: Also BMW seems more comfortable and safe, especially for longer distance trips on the open road. For Fiat, it is quite convenient to have it for city drive as it fits different parking spaces. But I always look at driving from a perspective of a person that uses a car for longer distance trips, between the cities and on a motorway. I would always choose because of that a larger and more stable car which would provide me with needed safety.	Safety, Parking space convenience, Long distance vs. city driving
INTERVIEWER: Understood. Now I would like to ask you if you can please circle the areas on both cars separately, which remind you of a human face? Please circle them separately.	
PARTICIPANT 6: Well these frontal parts with the headlights.	Headlights as eyes
INTERVIEWER: What in your opinion is the reason why the front part of the car looks to you as a human face?	
PARTICIPANT 6: The headlights are eyes and the grill in the front looks like mouth. With BMW, it looks like a serious, grown up person and Fiat is just smiling. Even this line where the logo of Fiat is located makes the car look as if it is smiling.	
INTERVIEWER: And is this familiar to you from before, this human tendency to interpret non-human objects using the human characteristics or emotions? For example when it comes to cars, home appliances, nature or other objects.	
PARTICIPANT 6: Yes, my mom always does this since I was child. To be specific with cars, saying things like that a car looks mean or nice. And with her, I also started doing this.	Family members seeing car fronts as faces
INTERVIEWER: Other objects?	
PARTICIPANT 6: I am sure it happens, but nothing comes to me at the moment.	
INTERVIEWER: Feel freely to think about it for a moment if it helps you.	
PARTICIPANT 6: Well of course I can see sometimes faces in the clouds; I think that is quite common for everyone. Also the power outlets I could relate to a human face, probably because of the two holes which resemble eyes. But besides these things, car are also as I inherited this from my mother ha-ha.	
INTERVIEWER: And in which situations would you say that you comment about the cars and human faces with your mother, any specific situations and moods you are in?	
PARTICIPANT 6: It usually happens when we are just walking and looking around, not being in a hurry, or when we are driving on a motorway. We don't discuss it when we are at home, but when we are outside yes. I can't remember now exactly, but I remember there were certain car models for which she would always say that they have evil eyes, thinking that the headlight have a shape that reminds her of human eyes on a face which is angry or mean.	Relaxed mood, Evil eyes on cars
INTERVIEWER: And for the end, I would just like to ask you a couple of general questions related to your experience with driving cars. How long have you been driving and how often do you drive it?	

PARTICIPANT 6: Well I have my driver's license for 12 years and I drive it daily, especially when I started working at a job that requires for me to drive it every day.	
INTERVIEWER: And would you say that you are a good driver?	
PARTICIPANT 6: Yes, honestly very good driver without being modest. Only on this car I have now I have 75 000km driven in the past two and half years, so experience is everything.	
INTERVIEWER: And if you would be choosing a car to buy now, which elements of the design are important to you and what do you prefer?	
PARTICIPANT 6: Well of the elements matter, such as colour, size, shape of headlights etc. But I think I would choose probably a car similar to the one I have at the moment, at least when it comes to exterior design. A car that doesn't have any sharp lines or a square looking design. My friend drives a Peugeot 2008 and it is square, looks like a box on wheels. My car has nice lines, also Kia XCeed and maybe Renault Kadjar, Nissan Qashqai. Also there is an Opel which looks similar to these in regards to design. Like a small jeep models, SUVs, car which are a bit higher than the regular ones. At this age I like those cars, but maybe in 10 years I would like to drive a limousine looking car. And then later in life I would probably return to driving the higher elevated cars.	SUVs
INTERVIEWER: Yes, so those are all some kind of crossover or SUV vehicles.	
PARTICIPANT 6: Yes, I like those as they are convenient for driving. They are easy to get in and get out, and also you have better visibility when you are driving as you are a bit more elevated from the ground. I mean it's not that they are like trucks, but still a bit better.	
PARTICIPANT 6: Warm and friendly is Fiat, and intelligent and competent would be BMW.	Fiat is warm, BMW is competent
PARTICIPANT 6: I think that it is ideal to have a parking sensor and back camera, so that is a feature I really value and has helped me master parking the car in different directions, especially parallel parking.	

## Appendix 5: Visual stimuli – Respondent 1





## Appendix 6: Visual stimuli – Respondent 2





**Appendix 7: Visual stimuli – Respondent 3**



## Appendix 8: Visual stimuli – Respondent 4



## Appendix 9: Visual stimuli – Respondent 5





**Appendix 10: Visual stimuli – Respondent 6**



## Appendix 11: Expression modes and their respective categories

Table 1  
Results of cluster analysis for expression categories

Group	1	2	3	4	5
Expression category	<ul style="list-style-type: none"> <li>• Classify by purpose</li> <li>• Classify by size</li> <li>• Classify by car's nationality</li> <li>• Classify by exhaust volume</li> <li>• Negative classifying</li> <li>• Classifying</li> </ul>	<ul style="list-style-type: none"> <li>• Emotions</li> <li>• Intuition feeling</li> <li>• Evaluation</li> <li>• Negative feeling</li> <li>• Personalized character</li> </ul>	<ul style="list-style-type: none"> <li>• Personality-similar object</li> <li>• Fictitious things</li> <li>• Scenario</li> <li>• Place</li> <li>• User's characteristics</li> <li>• Association</li> <li>• Board</li> <li>• Function</li> </ul>	<ul style="list-style-type: none"> <li>• Shape-similar objects (non-car)</li> <li>• Partial shape analogy</li> <li>• Whole shape analogy</li> <li>• Color analogy</li> <li>• Shape-similar car</li> <li>• Negation of similarity</li> <li>• Analogy</li> </ul>	<ul style="list-style-type: none"> <li>• Whole form</li> <li>• Partial form</li> <li>• Shape</li> <li>• Line style</li> <li>• Color style</li> <li>• Proportion</li> <li>• Form modification</li> <li>• Position</li> </ul>
Group name	Classifying	Conveying Emotions	Associating	Analogizing	Explaining Form

## Appendix 12: Codes and themes generated from the interviews

Number	Codes	Themes
1	Family and childhood memories, Family road trips, Current car owned	Theme 1: Top-of-mind awareness influenced by personal experiences
2	Fiat as round and gentle, Fiat as a small child, BMW as corporate businessman, Cute Fiat, Car as a friend, French cars hug you, Car adjusts to you	Theme 2: Cars as people
3	Evil eyes on cars, Family members seeing car fronts as faces, Headlights as eyes, Anime eyes, Porsche headlights as tears, Grill as angry	Theme 3: Car fronts as human faces
4	Don't want to own a Porsche due to high maintenance of the car, Easily find spare parts, Economical for usage and maintenance, Safety, German industry	Theme 4: Safety and total cost of ownership over product design
5	Household appliance, Gestalt principle, Pareidolia in nature, Men don't see human faces, Bag with human face, Power socket, Patterns on bathroom tiles, House as a face, Composition of elements	Theme 5: Seeing faces in non-human objects
6	Cute, child-like, round headlights	Theme 6: Friendly looking cars and warm brands
7	Aggressive car, like businessman	Theme 7: Aggressive looking cars and competent brands
8	Kia, Nissan, Toyota, new technologies, Asian know-how, electric vehicles, Renault as a warm brand, French warm brands	Theme 8: Asian brands and Tesla are perceived as competent, European as warm