CATÓLICA LISBON
BUSINESS & ECONOMICS

Reflection of Self-Serving Biases on Memory Representations:

The Unconscious Effects of Hedonic and Utilitarian Consumption

Luca Orsenigo

Dissertation written under the supervision of
João Pedro Niza Braga, PhD

Dissertation submitted in partial fulfilment of requirements for the MSc in Management with Specialization in Strategic Marketing, at Universidade Católica Portuguesa, 16th September 2020.

ABSTRACT

Title: “Reflection of self-serving biases on memory representations: the unconscious effects of hedonic and utilitarian consumption”

Author: Luca Orsenigo

The literature on consumer behavior already revealed that hedonic consumption suffers from the stigma of being considered as wasteful and unnecessary due to underlying cultural and religious beliefs. Therefore, consumers indulging in hedonic consumption commonly experience feelings of guilt and need for justification.

Additionally, people act according to the sacrosanct belief that the self is a moral, lovable, and capable individual. When they are threatened by potential evidence that is in contrast with that belief, consumers unconsciously adapt their behavior to restore a flattering self-image.

This study tackles the implications of hedonic and utilitarian consumption by investigating the reflection of self-serving biases on memory, which is subject to distortions through a process called belief-harmonization. The feeling of guilt related to hedonic consumption is expected to activate compensatory mechanisms and lead to the occurrence of memory distortions.

An online survey was distributed, dividing participants into two manipulation conditions: self-threat and self-affirmation. Respondents were presented with a situation in which they theoretically purchased a product that featured both hedonic and utilitarian attributes, which they had to recall a few minutes later, after a distraction task.

The results exhibited a strong impact of hedonism and utilitarianism on memory distortions, which have been amplified by the manipulation. Participants exposed to self-threat recalled more utilitarian features then hedonic, whereas those exposed to self-affirmation were more inclined to remember a greater number of hedonic attributes.

Keywords: Hedonism, Utilitarianism, Consumption, Consumer Behavior, Guilt, Self-Serving Bias, Memory Distortion, Self-Threat, Self-Affirmation

SUMÁRIO EXECUTIVO

Título: "Reflexão de enviesamentos egoístas nas representações da memória: os efeitos subconscientes do consumo hedónico e utilitário"

Autor: Luca Orsenigo

A literatura sobre comportamento do consumidor já revelou que o consumo hedónico sofre do estigma de ser considerado um desperdício e desnecessário devido às crenças culturais e religiosas subjacentes. Portanto, os consumidores que incorrem em consumo hedónico comumente experimentam sentimentos de culpa e necessidade de justificação.

Além disso, as pessoas agem de acordo com a crença sacrossanta de que o eu é um indivíduo moral, amável e capaz. Quando são ameaçados por potenciais evidências que contrastam com essa crença, os consumidores subconscientemente adaptam o seu comportamento para restaurar uma autoimagem positiva.

Este estudo aborda as implicações do consumo hedónico e utilitário investigando o reflexo de enviesamentos egoístas na memória, que está sujeita a distorções por meio de um processo denominado harmonização de crenças. Espera-se que o sentimento de culpa associado ao consumo hedónico ative mecanismos compensatórios e leve à ocorrência de distorções de memória.

Um inquérito online foi distribuído, dividindo os participantes em duas condições de manipulação: auto-ameaça e autoafirmação. Os entrevistados foram apresentados a uma situação em que, teoricamente, compraram um produto que apresentava atributos hedónicos e utilitários, dos quais eles se deveriam lembrar alguns minutos depois, após uma tarefa de distração.

Os resultados exibiram um forte impacto do hedonismo e do utilitarismo nas distorções da memória, ampliadas pela manipulação. Os participantes expostos à auto-ameaça relembraram mais características utilitárias do que hedónicas, enquanto aqueles expostos à autoafirmação estavam mais inclinados a lembrar um número maior de atributos hedónicos.

Palavras-chave: Hedonismo, Utilitarismo, Consumo, Comportamento do Consumidor, Culpa, Enviesamento egoísta, Distorção de Memória, Auto-Ameaça, Autoafirmação

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

1. INTRODUCTION

Our reality is pervaded by consumption since the moment we are born and we are constantly exposed to incentives to purchase and catch up with the latest trends and innovations. From the perspective of many, material abundance is directly related to greater happiness and well-being. However, several streams of research have already unveiled that reality is much more complex than that, and above a certain threshold of wealth greater material consumption does not correlate with enhanced levels of happiness and satisfaction.

The multiple facets of consumption have been thoroughly studied and questioned from different perspectives, identifying drivers, patterns, and categories that shape consumers' behavior. However, the great subjectivity and uniqueness of every purchase make it difficult to accurately grasp its underlying mechanisms. Essentially, as human beings, we have needs and wants that we try to satisfy through consumption. Clearly, some of them are more important than others, as it was presented in 1943 in Maslow's Pyramid, a motivational theory in psychology that comprised a five-tier model of human needs, displayed in hierarchical levels. According to Maslow, self-fulfillment needs, in which hedonic consumption would be collocated, belong to the top, the least important section of the pyramid.

Nevertheless, consumers often behave and consume in manners that are not rational, such as buying a luxury fashion item while being financially constrained or indulging in vices such as drinking, smoking, and gambling. Therefore, consumer behavior must be investigated by understanding the psychological processes that reside behind these purchases. Through consumption, we express and define our identity not only in the eyes of society, to signal our status, but also in front of our own eyes, to maintain a positive self-image and a coherent narrative of our perception of the self.

Therefore, underlying cultural and religious beliefs represent major factors in our consumption choices and shape the feelings that stem from those decisions. Hedonic pleasures and desires have been severely condemned throughout the centuries by different religions and cultures, leading pleasure-seeking behaviors to be deemed selfish and superficial. The contrast between the need to sustain a flattering self-image and the inner pulsion towards hedonic consumption generates tensions in consumers' psychology that reflect in feelings of guilt, need for justification, and compensatory effects. On the contrary, utilitarian consumption is considered

to be necessary and moral, therefore it does not carry the psychological burden and consequences typical of hedonic purchases.

To understand the effects of these mechanisms on memory represents a crucial objective for the research in consumers' behavior. In fact, since people design their future actions taking into account the perceptions and the feelings associated with past events, memory representations hold the premises that ultimately lead to people's future consumption choices.

2. LITERATURE REVIEW

2.1. HEDONIC AND UTILITARIAN CONSUMPTION

The distinction between hedonic and utilitarian consumption has been discussed and analyzed by academic research only during the last few decades. Since Hirschman and Holbrook (1982) shed light on hedonic consumption and the multiple ways in which consumers seek pleasure and enjoyment, remarkable signs of progress have been made toward understanding some of these parameters.

Originally, hedonic consumption has been defined as "those facets of consumer behavior that relate to the multisensory, fantasy, and emotive aspects of one's experience with products" (Hirschman & Holbrook, 1982). Much of the pioneering work in behavioral decision theory has mainly focused on the cognitive aspects of decision-making without exploring its emotional dimensions (Kahneman, 1991). However, emotional desires can often dominate functional motives in the choice of products (Maslow, 1968). Throughout the years, several streams of literature have categorized the phenomenon into bilateral perspectives such as hedonic versus utilitarian products (Strahilevitz & Myers, 1998), luxuries versus necessities (Kivetz & Simonson, 2002), affect-rich versus affect-poor goods (Rottenstreich and Hsee, 2001), virtues versus vices (Wertenbrock, 1998) and wants versus shoulds (Bazerman, Tenbrunsel, & Wade-Benzoni, 1998).

Nevertheless, an act of consumption can rarely be classified as purely hedonic or utilitarian. Oftentimes, the activity itself cannot be neatly circumscribed, as a prototypically hedonic good may possess utilitarian features, and vice-versa. For instance, a typically hedonic product such as chocolate could be consumed for its cardiovascular benefits. Hedonism and utilitarianism are not necessarily two ends of a one-dimensional scale (Voss, Spangenberg, & Grohmann, 2003). Different products can be high or low in both hedonic and utilitarian attributes (Crowley, Spangenberg, & Hughes, 1992). Thus, both utilitarian and hedonic consumption are discretionary and the difference between the two is a matter of degree or perception.

A goal-based perspective (Batra & Ahtola, 1991; Pham, 1998), which focuses on whether the consumer is pursuing hedonic or utilitarian objectives, may help to consider hedonic consumption as person-driven, with products serving merely as a pleasurable end. Moreover, this approach supports the empirical investigation by avoiding product-to-product comparison. However, even this perspective entails some issues, since the act of consumption is often driven

by some combination of objectives and identifying the relative weight of each can be a tedious task (Alba & Williams, 2013). For example, an automobile can be utilitarianly used to commute to work during the week, while during the weekends its owner may enjoy driving it just for leisure. In addition, a motivational approach raises the question of what it means to pursue a hedonic objective. Happiness can be experienced in different manners, including feelings as divergent as excitement and calm (Mogilner, Aaker & Kamvar, 2012). An intense gym workout may be perceived as liberating for someone who is trying to free his or her mind from stress, while, at the same time, it could be a dreadful and tiring experience for someone else. Therefore, the subjective and relative nature of pleasure and happiness reflects on the murkiness of categorizing consumption. Consider, for instance, the widespread inclination of seeking pleasure and thrill through activities or behaviors that are proved to be dangerous, painful, and risky, such as bungee jumping, skydiving, gambling, smoking, and drinking (Arnould & Price, 1993; Celsi, Rose & Leigh, 1993; Cotte, 1997; Hopkinson & Pujari, 1999). Despite numerous efforts to delineate the topic, consumer research has largely failed to capture it. In light of the preceding discussion, Hirshman & Holbrook's acknowledgment that true hedonic consumption lacks clear defining features (1982) remains a compelling consideration nowadays.

Khan, Dhar, & Wertenbroch (2005) provided an incisive distinction as "hedonic goods are multisensory and provide for experiential consumption, fun, pleasure, and excitement" while "utilitarian goods are primarily instrumental and their purchase is motivated by functional product aspects". On one hand, a necessary component of hedonic consumption is that the experience of consuming the product or event is pleasurable (and it is expected to be so). On the other hand, utilitarian consumption is characterized by instrumentality and functionality. The above-mentioned definition echoes Kivetz & Simonson's distinction between luxuries and necessities, whose implications dig into deep cultural, social, and religious beliefs.

2.2. GUILT AND NEED FOR JUSTIFICATION

Acknowledging that people often make consumption choices via unthinking impulse (Strack, Werth, & Duetsch, 2006) or through the influence of processes lying outside of conscious awareness (Dijksterhuis, Smith, van Baaren, & Wigboldus, 2005), the causes of those choices need to be researched over "extra-informational" considerations, such as ambient emotions (Lerner, Small, & Loewenstein, 2004) and social norms (McGraw & Tetlock, 2005). In Western culture, which values hard work and parsimony, hedonic consumption is often viewed as

wasteful and unnecessary (Lascu, 1991). As a consequence, hedonic purchases elicit a sense of guilt that can appear before, during, or after the act of consumption (Kivetz & Simonson, 2002; Prelec & Loewenstein, 1998; Strahilevitz & Myers, 1998). Because of its nature of experiential enjoyment (Batra & Ahtola, 1990; Hirschman & Holbrook, 1982; Mano & Oliver, 1993) and the feeling of guilt associated with it, hedonic consumption is more difficult to justify, especially compared to utilitarian products. Since justifiable options are easier to choose (Hsee, 1995; Simonson, 1989), hedonic goods bear a stigma that is attenuated only when the context facilitates the justification (Okada, 2005). The experiential nature of hedonism, moreover, makes it more difficult to evaluate and quantify its benefits, while quantifiable and objective motives are easier to justify (Hsee, 1995; Simonson, 1989). However, when a hedonic and a utilitarian alternative of comparable value are presented separately, consumers assign a higher rating to the hedonic option. Contrarily, when a hedonic and a utilitarian choice are presented together in a joint evaluation, the utilitarian alternative is more likely to be selected (Okada, 2005). The reversal in relative preference occurs because, in the joint evaluation, the utilitarian product highlights the discretionary nature of the hedonic option through the contrast effect (Herr, Sherman, & Fazio, 1983; Wedell, 1995). Thus, preference is influenced by how the alternatives are presented in the immediate decision environment (Okada, 2005). Regarding the expenditure type, Okada proved that consumers generally prefer to "pay in time" when they can anticipate the need for justification for a hedonic purchase (compared to a high-risk, high-return lottery), while they favor paying in money for utilitarian goods (low-risk, low-return lottery).

2.3.SELF-IMAGE AND BELIEF HARMONIZATION

Dunning (2007) suggests that the decision-making process is best described as "belief harmonization", stating that reaching a decision involves "arranging and revising one's beliefs, needs, and preferences into a network of cognitions that produces little, if any, tension or disharmony among its various elements." This represents a clear distinction from the classic economic models that considered consumption as a causal arrow that goes linearly from input beliefs, needs, and desires to the final decision. Contrarily, there may be beliefs that pull towards opposite directions and if people hold a bias to prefer one option over the other, then that preference can cause them to alter how they perceive the beliefs, needs, and desires that supposedly are inputs to that decision. Therefore, a consumer decision would not be a calculation leading to an outcome, but the outcome would lead people to realign their beliefs in some way to justify an outcome already preferred (Dunning, 2007).

The belief that the self is a moral, lovable and capable individual, for whom fate has planned a prosperous future, filled with joyful moments, has been defined as "sacrosanct belief" (Dunning, 2007). Consequently, whatever choice a person makes, it must honor and affirm a flattering self-image. Consider the example of Sherry, who holds the belief of being a frugal person, yet finds herself in some debt, which is inconsistent with her belief. Moreover, she is considering buying a car with a good resale value, facing another conflict: her frugality suggests that she should not buy the car, while the fact that it has a good resale value suggests that she should. Dealing with these contradictions, people revise their beliefs to make the connections between them more consonant with one another. One way to make them more consonant is to change some of them, deciding that some of them are much less (or more) plausible than initially thought (Kunda & Thagard, 1996; Shultz & Lepper, 1996). If Sherry really wants to buy the car, she may convince herself that she is not that much in debt, or that she really needs that car to commute to work. When consumers cannot deny the plausibility of a belief, they can deny its importance (Simon, Greenberg, & Brehm, 1995).

The problem with belief harmonization is the potential extreme to which people may apply it. At some point, providing a rationalization for a decision crosses a boundary to become a justification for a prejudice or a bias that is held with excessive strength (Dunning, 2007). To demonstrate how easily people can reverse the causality in the decision-making process, Holyoak and Simon (1999) set an experiment in which participants had to reflect and express their opinion about legal cases that presented new questions and circumstances, such as whether a person who posts negative and inflammatory comments on the Internet can be sued for libel. When participants indicated which conclusion they tentatively favored after first viewing the evidence, these conclusions subsequently influenced how they weighed the arguments and evidence put in front of them, such as whether society benefits from free speech over the Internet. Thus, if participants thought that people can be sued for comments they make on the Internet, they shifted input beliefs to line up with that outcome, arguing that unfettered speech is not so important. If they initially thought a person should not be sued, they shifted their input beliefs in the opposite direction, defending freedom of speech. Therefore, a preliminary opinion tends to alter how consumers subsequently evaluate the evidence and arguments they could adopt to reach their decision, even though these processes arise well before they commit to a final choice (Holyoak & Simon, 1999).

At times, people pursue harmonizing justifications beyond anything that appears logically reasonable or normatively appropriate. These justifications are called "outside beliefs", as they

would not be considered directly relevant or legitimately tied to the decision at hand (Dunning, 2007). On the contrary, if asked explicitly, consumers would reject them as appropriate considerations. Looking again at the before-mentioned experiment run by Holyoak and Simon (1999), in one condition participants were told that the defendant, accused of posting inflammatory comments on the Web, had a history of thoughtful analysis and constructive criticism. After this observation, respondents favored his side of the case. In the other condition, participants were told that the defendant had a history of malicious manipulation, which made participants consider him guilty.

This piece of information not only affected participants' verdicts but also their evaluation of legal evidence and discussion, that had nothing to do with whether the defendant was a nice person. For instance, participants in the first condition were more likely to agree with the rather technical legal argument that posting information on the Internet is like having a conversation (which is not subject to libel charges) rather than like distributing a publication (which is subject to libel). Instead, respondents assigned to the second condition, hearing that the defendant was a malevolent person, were more inclined to favor the opposite legal theory.

2.4. SELF-SIGNALING AND LICENSING EFFECT

Self-perception theory first proposed the idea that people make inferences about themselves from their behavior (Bem 1972). For example, hedonically choosing the rich, creamy Häagen Dazs ice cream over a less tasty bowl of fresh fruit for dessert may make consumers feel guilty of indulgence and lead them to infer that they are of the indulgent type. According to Dunning (2007), a behavior can be clearly diagnostic of an underlying trait. Therefore, people tend to adopt performance standards that place their own competence and character in a good light, and they change their performance standards depending on whether their self-esteem is under pressure.

Individuals make choices, in part, to signal the type of person they are. This phenomenon is called “self-signaling” and it does not concern the impression that one leaves on other people, but rather one’s self-image (Bodner & Prelec, 2003). In economic terms, Akerlof, Kranton et al. (2000) suggest that people derive diagnostic utility from holding a self-image they favor. For instance, a well-known experiment by Quattrone and Tversky (1984) required participants to hold their arm in ice water, which is supposed to be a painful task within seconds, before and after physical exercise. After the exercise, one group of participants was told that one indicator

of a healthy heart is high pain tolerance. Another group was told that healthy people had relatively little pain tolerance. Since their behavior could buy them a diagnosis, a signal, that they were among the healthy, people adapted their behavior to obtain a favorable response. Hence, those belonging to the first group kept their arm underwater longer than when they had not received such information. Vice-versa, those assigned to the second group kept their arm underwater for a significant briefer time than before.

Prior decisions can influence subsequent choices and initial actions can activate specific goals that guide following decisions towards attaining the desired objective (Dhar & Simonson, 1999). Once people have gained sufficient evidence that they possess certain sacrosanct traits, they feel licensed to act in a way that is inconsistent with that trait. To capture this mechanism, Monin and Miller (2001) conducted an experiment in which participants were asked to choose a police chief between two candidates: one was African American and the other was European American. Partakers in the control condition, not wanting to self-signal they had prejudices, were more inclined to favor the African American candidate. Nonetheless, if respondents had just filled a questionnaire that allowed them to show how anti-prejudiced they were, they felt licensed to select the European American officer at a greater rate. This pattern of choices occurred even when there was no other person who could know that the participant had previously renounced prejudice. This phenomenon is defined as "licensing effect" and it also appears in consumer choices as an effective guilt-reducing mechanism by providing a boost in the relevant self-concept (Khan & Dhar, 2006). Therefore, the guilt associated with hedonic consumption can be dampened by leveraging this effect. For instance, Kivetz and Simonson (2002) proved that higher requirements of effort in frequency programs shifted people's preferences towards receiving luxury rather than necessity rewards since increased effort presumably makes people feel that their hard work made them deserve the luxury reward. An experiment by Strahilevitz and Myer (1998) showed an increased preference for hedonic products when the purchase was tied to a charity donation. In a similar fashion, Khan and Dhar (2005) demonstrated that, after a charitable act, consumers tend to favor a hedonic option over a comparable utilitarian alternative. When asked about the motives of their choice, participants did not draw a connection between the charitable act and the following decision. Presumably, a charitable act generates positive inferences that reduce the negative self-attributions associated with hedonic consumption. Similarly, when exposed to a self-threat, people shape their behavior to compensate for their shortcomings in their own eyes. This compensatory effect has been researched by Willer, Rogalin, Conlon, & Wojnowicz (2013), who ran an experiment

with male and female college students by questioning one group's beliefs on their own masculinity or femininity. Those exposed to a threat to their masculinity subsequently expressed hyper-male attitudes relative to those in the control group. In particular, they declared greater opposition to same-sex marriage, more support to the Iraq war, and a higher preference for a sports utility vehicle rather than other automobiles.

2.5. MEMORY DISTORTION

Memory, which is the faculty of the brain that allows to encode, store, and retrieve data and information when needed, is the scaffolding upon which all mental life is constructed (Schacter, 1995). It is an impressively profound mechanism which is divided into different types and functions, through which we are able to maintain and develop crucial components of our life, including our own self-identity. Because of its importance, memory has been the objective of several streams of research in modern societies. Thus, by now it is widely acknowledged that, even though people often blindly trust their memories, recollections are never exact replicas of external reality (Schacter, 1995), but they are subject to multiple kinds of errors and distortions (Schacter, Guerin, & Jacques, 2011). Essentially, according to Bernstein and Loftus (2009), all memory is false to some degree since it goes through a process of reconstruction to form a coherent narrative. Memory distortion can be highly detrimental since who is remembering may not be able to tell whether the recollection is an error (Wells & Olson, 2003).

Although evidence supports the fact that memory distortions are diagnostic of deficient or dysfunctional cognitive processing (Schnider, 2008; Moulin et al., 2005; Clancy et al., 2000), a growing number of researchers have argued that, contrarily, many memory distortions reflect the operation of adaptive processes, which actually contribute to the efficient functioning of memory (Kellogg, 2007).

In a groundbreaking study in 1932, Bartlett first proposed the "schemata" model, which highlights that people follow patterns and cognitive structures of thought that simplify the understanding of the surrounding reality. Even though these structures are not static, they are relatively stable, thus the simplification comes at the expense of those new inputs that are not coherent with the current schema. In particular, people distort new information to make it fit into the pre-existing structures and narrative (Edward & Middleton, 1986). The term reconstructive retrieval refers to the schema-guided construction of episodic memories that interpret, embellish, integrate, and alter encoded memory representations. Bartlett examined

this phenomenon through a study in which participants had to recall a folk tale called "The War of the Ghosts", regarding North American Indians. Fifteen minutes after reading the story, people recalled an abstracted summarized version and Bartlett observed three kinds of errors through reconstructive retrieval. Firstly, the tale was leveled to a shorter version, omitting unfamiliar vocabulary and ideas. This loss of details is defined as "leveling". Secondly, through "assimilation" the recollection was rationalized or normalized to fit preconceived notions. Thirdly, "sharpening" refers to remembering details that were not actually present but that could be inferred from general knowledge.

Memory is stored in the brain in two forms: verbatim and gist. Verbatim traces of memory are representations of the items we empirically experience whereas gist traces represent interpretations of concepts that have been retrieved as encoding of items, thus being more subjective (Brainerd & Reyna, 2002). False memories can only derive from gist traces and, since they have been elaborated by relatively stable schemas, they can be even more persistent than true memories. However, verbatim traces become inaccessible faster than gist traces (Brainerd & Reyna, 2002). According to Rajagopal and Montgomery (2011), false memory is moderated by plausibility and timing of evaluation. In fact, when plausibility is high, so it is the probability of occurrence of false memory due to gist retrieval. Similarly, as the distance in time between the event and the recall increases, the influence of gist retrieval will gradually solidify and, inversely, verbatim retrieval will tend to diminish. Turning back to Bartlett's experiment in 1932, over hours, weeks, months, and years, repeated efforts to recall the story magnified all of the distortions (Kellogg, 2007).

Adding on to this, since memory distortions have a semantic nature, it is worth mentioning the distinction between semantic and episodic memory. Tulving (1972) affirmed that both semantic and episodic memory belong to long-term memory and they are not mutually exclusive. Semantic memory indicates the mechanism in which conceptual knowledge is stored in an organized and relational manner, including general meanings, concepts, and words that form the bases of complex systems such as language. Episodic memory, instead, is embedded in the personal experience of an individual, it is autobiographical and it pertains to the temporal-spatial context of experienced episodes (Tulving, 1972). Practically, semantic memory is closer to the common definition of knowledge, while episodic memory is more related to the widespread concept of remembering.

For the purpose of this study, it is crucial to examine how people reconstruct autobiographical events. Recalling one's life inevitably brings to light the significant events or episodes, which are not remembered as isolated events but rather as part of a narrative that gives life meaning and defines the self (Bruner, 1990). Conway (1990) showed that people recall autobiographical events by lifetime periods such as "when I lived in X" or "when I worked for Y". These lifetime periods can be extended over years or even decades and they represent the first level of retrieval cues, which might evoke moods, goals, and trigger more specific recollections. General events represent the second level of retrieval cues. These are chronologically organized personal experiences clustered by thematically important landmarks in time. Lastly, the third level of retrieval cues consists of concrete images or sensory replays of a specific event (Kellogg, 2007). These recollections are always incorporated into schema-based representations of general events (Conway, 1992). In fact, reconstructing the past, people color and shape their life's experiences based on their knowledge and interpretation of the world (Schacter et al., 2011). Taken to the extreme, this process may result in confabulation, which consists in generating a narrative account for events that never happened (Kopelman, 1999).

In criminal trials, memory distortions can lead to serious issues since it is widely recognized that the testimony of an eyewitness exerts a powerful influence on jurors. The members of a jury typically believe that eyewitness reports are accurate unless, for some reason, the witness is deliberately lying (Kellogg, 2007). In reality, eyewitnesses can fall victim to distortions of memory because of inaccurate encoding and retrieving of episodes (Loftus, 1979).

3. HYPOTHESIS FORMULATION

Taking into consideration that people unconsciously shape their behavior to maintain a generally positive and flattering self-image, along with the fact that memory is subject to distortion to make new information fit into pre-existing schemas to form a coherent narrative, it is expected that guilt associated with hedonic consumption will affect not only consumers' perception of the product but also its recollection. In particular, self-threatened participants are expected to show a greater need for justification, hence their memory will be more likely to forget or distort those hedonic attributes that would make them feel guilty. Inversely, respondents exposed to self-affirmation, due to the licensing effect, are expected to experience mitigated levels of guilt. With no need for justification, they will be more prone to show a preference for hedonic attributes, hence those features are supposed to stick in their memory at a higher rate compared to utilitarian features.

Based on research concerning the above-mentioned topics, the following hypothesis was formulated:

H1: *Memory representation of the attributes of a product is expected to depend on the hedonic and utilitarian framing of the attributes*.

H1a: *Moreover, people exposed to self-affirmation manipulation, compared with those exposed to self-threat, will be more inclined to remember hedonic features rather than utilitarian.*

H1b: *Respondents exposed to self-threat, due to their need for justification, are expected to show a greater occurrence of false recalls of utilitarian attributes compared to those exposed to self-affirmation.*

4. METHODOLOGY

4.1. DESIGN

This study followed a mixed factorial designed 2(self-affirmation vs self-threat) x 2(hedonic vs utilitarian) with repeated measures on the last factor. The independent variable was the Manipulation, which has been randomly and evenly assigned to the respondents, while the dependent variable consisted in the recall of attributes.

The survey was divided into different blocks: Introduction, Manipulation, Manipulation efficacy, Attributes presentation (which has been divided into twenty-two blocks to randomize the order of displaying), Distraction Task, Recollection of attributes and Demographics.

4.2. CHOICE OF THE PRODUCT

To test the above-mentioned hypothesis, it was to be selected a product with specific characteristics. Firstly, the product should not bear remarkably different consumption patterns regarding gender and/or age. Thus, it should be a product category that is appealing and necessary almost equally to males and females, youngsters and elderly. Secondly, considering the procedure of this study, the chosen product should present both utilitarian and hedonic features, also in terms of usage and consumption goals. Moreover, to make the scenario more intense and the consequent emotions more vivid, people are supposed to spend a relatively considerable amount of money on that item.

Building on these premises, a winter coat has been finally chosen, a product category that almost everyone had already experienced purchasing, which matched the general requirements needed for the sake of this study.

4.3. PRE-TEST

A pre-test was conducted to test both the hedonic and utilitarian nature of the attributes. Specifically, seven respondents were asked to rate the coat's features on a utilitarian-hedonic scale, ranging from 0 to 10, where 0 would be an entirely utilitarian attribute while 10 would be an entirely hedonic attribute. A definition of hedonic and utilitarian attributes was provided at the beginning. Twenty-three attributes were presented, each one having a hedonic and a utilitarian framing, accounting for a total of forty-six sentences. Results highlighted that one

attribute was excessively skewed towards a utilitarian perception even in its hedonic framing, thus it has been removed from this study.

4.4. PROCEDURE

As already mentioned in the hypothesis formulation, partakers were expected to show greater (weaker) feelings of guilt when exposed to a self-threat (self-affirmation). The initial manipulation, which came together with the presentation of the scenario, had the purpose of leading the participant either to a need for justification or to a self-licensing condition.

Previous research showed that preferences for a hedonic option are enhanced when the purchase is tied to charity donations (Strahilevitz and Myers, 1998) or when it occurs after a charity donation (Dhar and Khan, 2005). Thus, the Self-Affirmation condition carried the subsequent message:

"Imagine that you just bought for yourself a winter coat, which has been produced with sustainable processes and maximum attention to the working conditions. The brand has worked in partnership with a well-known and highly reliable charitable institution. No animal has been harmed.

The proceeds coming from your purchase will be donated to charity."

The Self-Threat condition, instead, displayed the following descriptive text:

"Imagine that you just bought for yourself a winter coat, whose characteristics will be shown next. Before walking into the store, you noticed that there was a well-known and highly reliable charitable institution collecting donations.

You have chosen to buy the coat and you refused to donate money to charity."

Subsequently, the Manipulation Efficacy block consisted of three questions concerning the emotional state of the respondents: *"After your gesture, how ethical do you feel?"; "How proud do you feel?"; "How ashamed do you feel?"* Partakers had to answer these questions on a 10-point scale. This block forced people to rethink about the fictional situation that had been presented to them, letting those emotional reactions stick in their minds.

Then, brief instructions were given to the respondents regarding the display of the attributes, stating that each attribute would have been visible just for a few seconds. Moreover, they had been told that further questions about those attributes would have been asked later in this study.

Twenty-two features were shown to the participants, half of the features had a utilitarian framing while the other half carried a hedonic framing. The attributes were displayed in random order. To avoid biases coming from the salience of the features themselves, two surveys per condition had been drafted, showing a utilitarian framing for those attributes that carried a hedonic framing on the other, complementary survey, and vice-versa (e.g., Hedonic attribute – *"3/4 length of the coat that makes you look classy."*; Utilitarian attribute – *"3/4 length of the coat that protects your body from the cold."*) Following previous research (Chernev, 2004; Dhar & Wertenbroch, 2000; Lu et al., 2016) the time of visibility for each attribute was calculated doubling the average necessary time for a single read. When the timing was over, the survey advanced automatically to the next feature. Afterward, participants have been randomly and evenly assigned to one of the two distraction tasks, which were intended to restraint the working memory accessibility, following previous research (Childers & Houston, 1984; Edell & Staelin, 1983). Partakers were given a text containing some basic data that were to be used to answer the upcoming questions. Respondents had to rate on a 9-point scale how close they felt to the other participants. Then, they had to compare their scenario to the others', based on previous information, on a 7-point matrix table. After being presented with another text, at the end of the block they rated how interesting they found the passage on a 10-point scale.

After the distraction task, meant to last a couple of minutes, participants were asked to write down freely all the attributes they recalled about the coat presented earlier in the study. A brief reminder of the manipulation was inserted to highlight its effect on the recollection (e.g., the Self-Threat condition had the following request: *"Please write below, in casual order, all the attributes you remember about the coat you just bought, refusing to donate money to charity."*)

Once completed the free recollection part, the survey advanced asking about the willingness to pay for the above-mentioned coat. Respondents expressed their will through a slider ranging from €0 to €1000. Finally, participants were asked to rate the coat on a utilitarian-hedonic bipolar scale, from 0 to 10, where 0 would correspond to an entirely utilitarian good while 10 would correspond to an entirely hedonic good. To minimize misunderstandings, a definition of the two categories was provided below *("Hedonic goods are those that involve multisensory*

dimensions and provide consumption of experience, fun, pleasure, and excitement." "Utility goods are fundamentally instrumental and their purchase is motivated by functional aspects of the product." Khan, Dhar, & Wertenbroch, 2005). Again, a slider type of question was adopted, which started from the middle point.

The survey ended with a demographic block, which collected data regarding gender, age, nationality, level of education, and professional situation.

4.5. SAMPLE

After clearing the dataset from incomplete answers and outliers, a total of 229 responses were registered, of which 122 pertained to the Self-Affirmation condition and 127 were exposed to the Self-Threat manipulation. A response was considered valid only after completing the free recollection, answering about willingness to pay and utilitarian-hedonic perception of the product. The majority of participants were males (65.5% versus 34.5%) while the average age was 32.3 years, ranging from 18 to 68. Concerning the level of education, most of the respondents held a bachelor degree (55.9%), 23.1% held a Master degree, 12.1% were high school graduates, 5.2% held a professional degree, 3.1% had a doctorate and less than 1% of the sample had primary or middle school. Professionally, approximately 55% were employed, 23% were students, 11% of the sample was unemployed while 10% were self-employed. About 1% of the participants had already retired.

5. ANALYSIS AND RESULTS

5.1. MANIPULATION

Following the structure of the survey, the analysis starts with the manipulation check. To determine the efficacy of the self-threat/self-affirmation manipulation, an independent samples t-test was conducted, comparing the means of the two different groups of respondents. The output reported statistically significant differences for all of the three questions. Specifically, people in the self-affirmation condition, compared to those exposed to self-threat, declared to feel more ethical ($M_{Self\text{-}Aff}$ = 8.06, SD = 1.762; $M_{Self\text{-}Threat}$ = 4.80, SD = 3.038; p = .000), prouder ($M_{Self\text{-}Aff}$ = 7.93, SD = 2.233; $M_{Self\text{-}Threat}$ = 3.14, SD = 2.556; p = .005), and less ashamed ($M_{Self\text{-}Aff}$ = 1.64, SD = 2.431; $M_{Self\text{-}Threat}$ = 5.90, SD = 2.928; p = .004) on a 10-point scale, where 0 corresponded to "not ethical at all" and 10 corresponded to "extremely ethical", taking the first variable as an example.

5.2. RECOLLECTION OF ATTRIBUTES

Given the nature of the free recollection, in which respondents encountered a series of blank text entries and they had to write all the attributes they remembered, many answers presented words that were different from the initial description of the coat's features. In some cases, these differences consisted in the use of synonyms or a different phrasing, whilst, in some other cases, the answers displayed either a twisted perception of the attribute (from utilitarian to hedonic or vice-versa) or, more rarely, a completely new feature, that was not pitched in the initial presentation of the attributes.

To analyze this section, every answer had to be recoded to make it correspond to one of the attributes originally present in the survey, with either a hedonic or a utilitarian framing. Four new variables were created to categorize the recalls: correct hedonic (CH), correct utilitarian (CU), false hedonic (FH), false utilitarian (FU). To register a valid correct response, the participant needed to make it clear to which feature he or she was referring, even if he or she did not use the exact same words with which the attribute was presented. Hence, the use of synonyms or a different phrasing did not compromise the correctness of the response. False recollections, in turn, were recorded every time an attribute was twisted or every time the participant made up a non-preexisting feature, still giving it a hedonic or utilitarian nuance. In case the respondent answered with a non-preexistent attribute without making it possible to categorize as either hedonic or utilitarian, the response was considered invalid and erased.

A 2 (threat/affirmation) x 2 (hedonic/utilitarian) x 2 (correct/false recall) repeated measures ANOVA was performed using the manipulation conditions as between-subjects factor and the categorizations of the recollections as within-subjects factor. This methodology allowed to evaluate the effect of the manipulation on the recollection of attributes, comparing the scores between the two conditions, and analyzing the interactions. Looking at the Table 1, the Descriptives Statistics report that respondents in the self-threat condition, compared to those in the self-affirmation condition, recalled less correct hedonic attributes ($M_{Self\text{-}Threat}$ = 2.52, SD = 2.235; $M_{Self\text{-}Aff}$ = 4.54, SD = 2.105) and more correct utilitarian features ($M_{Self\text{-}Threat}$ = 3.96, SD = 2.107; $M_{Self\text{-}Aff}$ = 2.94, SD = 2.111). Comparing the total CH and CU recollections, the averages are very similar (M_{CH} = 3.51, SD = 2.393; M_{CU} = 3.46, SD = 2.165). Regarding the false recalls, they are almost null for both the hedonic and utilitarian framings.

Descriptive Statistics

	condition_dummy	Mean	Std. Deviation	N
CH	Self Threat	2,52	2,235	117
	Self Aff	4,54	2,105	112
	Total	3,51	2,393	229
FH	Self Threat	,03	,225	117
	Self Aff	,02	,133	112
	Total	,03	,185	229
CU	Self Threat	3,96	2,107	117
	Self Aff	2,94	2,111	112
	Total	3,46	2,165	229
FU	Self Threat	,03	,159	117
	Self Aff	,04	,230	112
	Total	,03	,196	229

Table 1: Recollection of Attributes: Descriptives Statistics

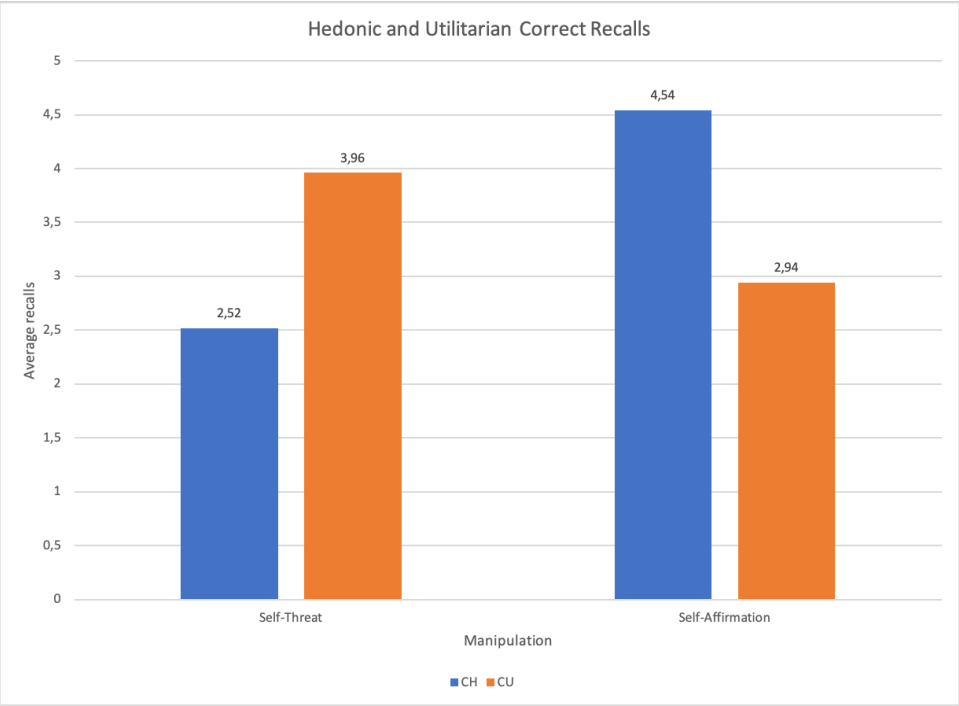

Figure 1: Correct Recalls - Hedonic and Utilitarian features recalled in each condition

Looking at the Multivariate tests (Appendix III.b.: Table 10) and at the Within-Subject Effects Table (Appendix III.b.: Table 11) a strong statistically significant interaction effect was observed regarding the interaction between hedonic/utilitarian and the condition variable (self-threat/self-affirmation manipulation) [F (1, 227) = 102.455, p = .000, multivariate eta squared = .311], which highlights the efficacy of the manipulation on the recollection of attributes, suggesting that participants in the self-threat condition are more likely to recall utilitarian features while participants in the self-affirmation condition are more likely to recall hedonic than utilitarian features. A main effect of correct/incorrect recalls was found, indicating that participants were more likely to recall correct than incorrect items (F (1,227) = 891.938, p = .000; $M_{correct}$ = 6.97, $SD_{correct}$ = 2.279; M_{false} = .03; SD_{false} = .191). Moreover, a significant effect were displayed regarding the interaction between correct/false and the condition variable [F (1, 227) = 4.264, p = .04, multivariate eta squared = .018], suggesting that participants recall more correct attributes in the self-affirmation condition than on the self-threat condition, but no significant differences between conditions were found for false-recalls.

Finally, a significant third-order interaction was also found for hedonic/utilitarian, correct/false, and the condition variable [F (1, 227) = 110.939, p = .000, multivariate eta squared = .328].

5.3. WILLINGNESS TO PAY AND PERCEPTION OF THE PRODUCT

Expecting a positive correlation between WTP and hedonic perception of the product, these two variables have been analyzed together. An independent-samples t-test was conducted to compare the means regarding the willingness-to-pay between participants in the self-affirmation and self-threat conditions. Data disclosed a statistically significant difference between the groups ($M_{Self\text{-}Aff}$ = 391.78, SD = 210.73, t(227) = 6.28, p = < .001; $M_{Self\text{-}Threat}$ = 239.05, SD = 153.84, t(227) = 6.46, p = < .001). On average, respondents in the self-affirmation condition were willing to pay €152.73 more than those in the self-threat condition for the same coat (Appendix III.c.: Table 14).

Regarding the utilitarian/hedonic perception of the coat, the independent-samples t-test exhibited a considerable difference in terms of means, revealing that the self-affirmed group was more inclined to evaluate the product as hedonic than the other group ($M_{Self\text{-}Aff}$ = 6.21, SD = 2.63; $M_{Self\text{-}Threat}$ = 4.17, SD = 2.14; p = .053) even though the p-value is slightly higher than .05, therefore the difference is "marginally significant". Nevertheless, since participants answered on a 10-point scale, where 0 was associated with "fully utilitarian" and 10 was associated with "fully hedonic", it is possible to declare that the results reflected the expectations.

6. DISCUSSION

6.1. MANIPULATION

A key premise for the success of this research was to perform an effective manipulation of the participants' mood, otherwise, it would not have been possible to analyze the differences regarding memory distortions, willingness to pay, and perception of the product between the two conditions. Consistently with the theoretical findings of Strahilevitz and Myer (1998) and Khan and Dhar (2005), the manipulation turned out to be effective for all the three dimensions investigated (ethical; proud; ashamed), as reported in the previous chapter. Nevertheless, the results from the participants in the self-threat condition showed a particularly high standard deviation for all the three questions posed ($SD_{Self\text{-}Threat\ ethical} = 3.038$; $SD_{Self\text{-}Threat\ proud} = 2.556$; $SD_{Self\text{-}Threat\ ashamed} = 2.928$), revealing a greater dispersion of the responses compared to the other condition. On one hand, some might have fairly thought that refusing to donate to charity on that particular occasion was not an unchallengeable sign of a lack of ethicality, therefore there should be no reason to be ashamed or "not proud at all". On the other hand, a relatively lower dispersion of the results indicates that more people in the self-affirmation condition must have thought that choosing to buy a product whose proceeds were going to be donated to charity, on that particular occasion, was indeed a gesture that could infer ethicality, something to be proud of and not ashamed at all. However, considering the mean results and their significance, according to people, donating money to charity appears to be a powerful diagnostic indicator of the goodness and benevolence of the self. Given these results, future discrepancies in responses between the two groups will be considered as a consequence of the manipulation. Theoretically, after the manipulation of the self-esteem, respondents were supposed to unconsciously show either licensing effect or need for justification, according to the condition to which they were assigned. Ultimately, these mechanisms would hypothetically affect the recollection of the attributes of the product, its perceived value, and its hedonic/utilitarian nature. Thus, it is possible to conclude that the whole study hinges on the before-mentioned manipulation, which has generated a ripple effect, triggering a series of consequent reactions on the respondents.

6.2. RECOLLECTION OF ATTRIBUTES

After the manipulation section, the coat's features were presented to the participants, one at a time, giving them enough time to read the sentence and try to memorize it. However, trying to witness some degrees of forgetfulness and distortions for the purpose of this study, twenty-two

descriptions of attributes have been displayed, which constitute a noticeable amount of information to process. Then, the distraction task had the objective of making the time pass, and overloading the memory with additional unrelated data, restraining the working memory accessibility. Once this task was completed, respondents filled the free-recollection section, unconsciously reflecting the expectations concerning the pattern of results, at least regarding the correct recalls. As mentioned before, people assigned to the self-threat condition recalled significantly more correct utilitarian features, while, conversely, people assigned to the self-affirmation manipulation remembered significantly more hedonic attributes. According to the theoretical foundation on which this experiment was built, participants exposed to self-threat experienced a consequent feeling of guilt that triggered a unconscious need for justification. Refusing to donate money to charity to buy something for the self can be considered an egoistic gesture by most people, especially if the item in question bears some typically hedonic features. Nevertheless, the need for justification does not arise as a defense mechanism from other people's judgment but it stems from the unavoidable inclination to preserve a positive image of the self. In this survey, people were answering anonymously and free from any possible external judgment, yet they acted in a way that was meant to perpetuate the sacrosanct belief that the self is a moral, lovable, and capable individual. This belief happens to be in contrast with the selfish nature of the purchase, hence respondents were more inclined to unconsciously overlook or downplay the relevance of the hedonic attributes, which are associated with the feeling of guilt, focusing instead on those features pitched with a utilitarian framing.

People exposed to self-affirmation, instead, were expected to exhibit a pattern of responses typical of the psychological phenomenon known as licensing effect. In this case, after having envisioned a situation in which their purchase was helping a good cause, participants had acquired sufficient evidence that they possessed certain sacrosanct traits, such as generosity and benevolence. As a consequence, they felt licensed to act in a way that was inconsistent with those traits. If buying an item that presents hedonic features would normally cause them to experience feelings of guilt, the licensing effect functioned as an effective guilt-reducing mechanism. Thus, after the manipulation participants were more prone to focus on those features that they would value or enjoy the most in that product, without worrying about acknowledging that they might have bought that coat because they indulged in its hedonic qualities.

Both need for justification and licensing effect are reflected in the free recollection section of the survey. In fact, the complex mechanism of memory interprets, embellishes, integrates, and

alters encoded memory representations, making these representations fit into preexisting schemas to be part of a coherent narrative, which usually portrays a positive and flattering image of the self. Hence, as expected, the participants' recollections were subjected to those unconscious adaptive processes, generated by self-serving biases, that preserve the before-mentioned sacrosanct belief.

The repeated measures ANOVA reported a strong significant interaction between hedonic/utilitarian and the condition variable, showing that the condition to which participants were assigned influenced effectively the number of hedonic and utilitarian recalls. The significance of the interaction among the three variables (hedonic/utilitarian; correct/false; condition) can be explained considering that false recalls are almost non-existent, creating a floor effect, while there is a clear interaction between hedonic/utilitarian and the condition. Taking into consideration both conditions together and observing that there is no significant difference between the amount of hedonic and utilitarian attributes recalled, it is possible to infer that the framing of the attributes was not biased or skewed towards one end (hedonic or utilitarian), while both categories featured similar levels of difficulty for the participants' memory.

A possible explanation to the very low amount of false recalls, which were expected to be particularly present among participants in the self-threat condition, either turning hedonic attributes into utilitarian ones or wrongly recalling utilitarian attributes that were not actually displayed in the survey, might reside in the configuration of this section of the survey. The nature of the free recollection might have affected the presence of false recalls since participants may have logically written only the features they were sure to remember, paying attention not to make a mistake.

6.3. WILLINGNESS TO PAY AND PERCEPTION OF THE PRODUCT

The willingness to pay, which was outlined to measure the monetary repercussions triggered by threat and affirmation, reflected the pattern of results displayed in the preceding section. In fact, respondents exposed to self-affirmation, who recalled more hedonic attributes, exhibited a significantly higher WTP compared to those exposed to self-threat. Participants evaluated their willingness to pay while keeping in mind the features they had recently recalled, thus they instinctively valued more the coat when they remembered more hedonic features, for which consumers are willing to pay a premium price. Also, answering the survey with a more positive

mood may have contributed to the idea that they can dispose of a greater amount of money than what is actually within their financial capabilities. On the contrary, consumers are willing to spend less if they recall mostly utilitarian features. Moreover, being exposed to self-threat manipulation, they may have filled the survey with a more negative mood and a defensive attitude. This might have led to the idea that they bought the coat because they actually needed a product with qualities such as water-resistant or protective from cold rather than a fashion item. The utilitarian/hedonic perception of the product highlighted that, at this point in the survey, participants were still influenced by the manipulation. Nevertheless, the high standard deviation which resulted both from the WTP and for the perception of the product reveals once again the subjective nature of the topic and the consequent variability of responses.

7. CONCLUSIONS

7.1. MAIN FINDINGS AND CONCLUSIONS

This study was designed to understand the effects of hedonic and utilitarian perceptions of the product on memory representations. Building on previous streams of literature, a manipulation has been added at the beginning of the survey to induce the participants to perceive the attributes of the product either in a more utilitarian or hedonic way. The manipulation, which randomly exposed respondents to either self-threat or self-affirmation, turned out to be effective and stirred in the participants either need for justification, which is associated with self-threat, or licensing effect, which is triggered by self-affirmation. Shortly after the manipulation of the mood, partakers were presented with the attributes of the product, which was a winter coat, processing a considerable amount of new information. The memory overload, magnified by the subsequent distraction task and combined with the recent manipulation, induced participants to encode the new pieces of information in a manner that was different depending on the condition they were assigned to. These differences were reflected in the results of the free-recollection part of the survey, in which the repeated measures ANOVA exhibited that the condition to which participants were assigned significantly influenced the hedonic or utilitarian nature of the recalls.

The main hypothesis H1 can be confirmed, recognizing that the framing of the attributes has ultimately influenced the recollection of the attributes. In the case of the group assigned to the self-threat condition, when participants saw an attribute that was presented with a framing that was threatening their positive self-image, they were more prone to forget it. This mechanism is caused by the unconscious need to preserve a flattering self-image, which is unrelated to the pressure of any external judgment. Instead, partakers assigned to the self-affirmation condition, when they saw an attribute that was framed hedonically, felt more licensed to acknowledge the fact that it was a feature they actually valued, leading to a higher rate of recalls of hedonic attributes. Therefore, self-biases affect not only the instantaneous perception of a product or feature but also its memory representation.

Thus, it is possible to confirm the hypothesis H1a, considering that respondents in the self-affirmation condition showed a greater inclination to recall more hedonic features than utilitarian, whereas participants in the self-threat condition, on the contrary, tended to remember more utilitarian attributes.

According to the hypothesis H1b, participants in the self-threat condition were expected to display a greater occurrence of false utilitarian memories due to memory distortions caused by feelings of guilt and need for justification. Instead, false memories appeared to be barely present in the results from both conditions, showing no significant difference between the two groups. For this reason, it is not possible to confirm the hypothesis H1b, while it would be recommendable for further researches to investigate the topic using a different method.

Self-threatened participants, compared to the self-affirmed ones, expressed a lower willingness to pay and a more utilitarian perception of the product. Therefore, as expected from the theoretical background, people who recalled more hedonic features, were also significantly willing to pay more.

This study contributed to the relatively scarce literature that addresses the effects of self-serving biases on memory representations. In particular, the psychological implications of hedonic and utilitarian consumption have been employed to grasp the mechanisms that drive consumers' feelings and recollections after a purchase. The significant findings of this study can represent an interesting basis for further analysis, given the relevance of understanding post-consumption feelings in consumer behavior and the potential managerial implications.

7.2. MANAGERIAL IMPLICATIONS

This study provides relevant insights for managers and marketeers since it presents unconscious mechanisms that significantly affect the consumers' perception of a product. Management should be aware of the exhibited phenomena to design a marketing strategy that correctly addresses and harnesses the psychological structures of consumers.

The indulgent nature of hedonic consumption stirs feelings of guilt and need for justification that can significantly undermine the perception of the purchase and its frequency. Moreover, since the feeling of guilt can arise also before the act of consumption, guilt may lead the consumer to renounce the purchase or to opt for a more justifiable option. Therefore, companies should concentrate their efforts on dampening this negative feeling by making hedonic consumption easier to justify. As explained by Strahilevitz and Myer (1998), a hedonic purchase is preferred when tied to a charity donation, whereas Dhar and Khan (2005), exploring the concept of self-licensing, found that consumers are more inclined to favor a hedonic product (or service) after an act of charity. Since people are generally looking for confirms that, overall, they are respectable, generous, and capable individuals, for the success of the marketing

campaign of a hedonic product it is crucial to make the consumer feel good about himself before, during, and after the purchase, contributing to creating a flattering self-image. Then, promoting a hedonic product as the adequate prize for the many sacrifices and efforts that one has made should be an effective manner to inhibit the feeling of guilt and create, instead, a coherent narrative in which the consumer deserves that product. Nevertheless, to avoid the occurrence of guilt after consumption, managers should emphasize some utilitarian aspects of the product, when it is possible, through post-consumption assistance. This way, people will be more prone to appreciate the utility of the purchase while receiving a level of customer service that cannot be matched by a fully utilitarian product. Clearly, this strategy does not apply to every product since, for instance, a bar of chocolate cannot be subjected to post-consumption assistance, but it could still highlight, either on the packaging or through other means, some benefits related to its consumption such as a boost of energy or its positive cardiovascular effects.

Regarding utilitarian consumption, on the other hand, managers could subtly focus on the greater morality and ethicality of the product, promoting a narrative in which it would not make sense to choose a hedonic product when the utilitarian one meets every need and characteristic sought, usually for a lower price. This strategy would make utilitarian consumption more justifiable, providing consumers with evidence that they are not spendthrifts. On the contrary, they can feel legitimated to consider themselves moral and rational people.

7.3. LIMITATIONS AND FUTURE RESEARCH

Although this study was capable of providing insights regarding the effects on hedonic and utilitarian consumption on memory representations, there are some limitations that may help to better understand the validity of this study and guide future research on this topic. For this purpose, limitations and future research will be presented together, since the shortcomings of this study may represent a starting point for further investigations.

Firstly, the data collection method was an online survey, which has many advantages such as being the most practical way to gather a relevant number of results, besides representing the most economic and less invasive method. However, respondents are less likely to remain fully engaged and focused, especially considering the length of this survey, which was estimated to last fifteen minutes. The sample of two-hundred and twenty-nine complete responses,

distributed through family, friends, and social media may not be representative of the entire population and may lead to biased data.

Secondly, the manipulation, which turned out to be effective for the three variables investigated (ethicality, pride, and shame), hinged on the consequences of either committing to a charity donation or turning it down. Future research may adopt a different manipulation and/or different parameters to test its effectiveness. Moreover, the randomized manipulation divided the participants into two conditions, self-threat and self-affirmation, but it could be scientifically relevant in the future to add a control group with no manipulation of the mood, having people answering the survey in their "default mode".

Regarding the choice of the product, a winter coat appeared to be a widely used product that could feature both hedonic and utilitarian attributes, with similar usage and consumption in terms of gender and age, and an average price that is high enough to amplify the feelings related to its purchase. The high standard deviation reported in the willingness-to-pay for both conditions, however, implies a strong subjectivity that could undermine the reliability of the findings. The features of the coat have been pre-tested to make sure that people perceived the different framing of the attributes as it was supposed to, either hedonically or utilitarianly. Nevertheless, presenting different attributes may present the occurrence of biases regarding the perceived relevance of some attributes compared to others. Some attributes may display different levels of difficulty to remember, since some words may stick in the minds of partakers with more strength than some others. Moreover, using a single product may be restrictive for the extensibility of the findings, since the same pattern of results might not be exhibited using a different product category. Therefore, an alternative could be to present a list of different products, of which one half is utilitarian and the other half is hedonic. However, this method may present again the issue of having some products that are more relevant than others in the participants' perceptions. Another interesting path for future research can be explored by manipulating product involvement. The product under study is usually a low involvement product, which may be particularly prone to non-conscious intuitive processes when compared to high-involvement or high-risk products. On the other hand, high risk products may be particularly prone to self-serving bias in order to justify high-risk consumer decisions, which could foster the observed motivational effect.

Advancing to the distraction task, since the objective of this study was to favor and analyze possible memory distortions and since the passing of time fosters false memories, it would have

been optimal to have a longer distraction task. Hypothetically, the survey could be divided into two parts: the first one would last until the presentation of the attributes, while the second part would resume after a few hours or even the day after, starting from the recollection. This method would foster the gist retrieval and the occurrence of false memories and distortions. Still, a similar procedure would be difficult to implement in an online, unpaid survey, leading to a drastic drop in responses. In this case, if it is possible in terms of time and funds, it would be recommendable to conduct a field experiment in which participants can be directly assessed.

Following the structure of the survey, the main limitation of the free recollection is that it appeared to discourage the participants from writing attributes that they were not sure to remember, leading to a very low number of false memories. Moreover, this section was the most invasive of the survey, considering that respondents had to put more effort than they expect to do in an online survey, therefore some of them either dropped the survey or wrote non-sense words to fill the spaces. Naturally, those responses have been considered null. Analyzing this section, a false recall was registered when the participant remembered a hedonic feature twisting it into a utilitarian one or when he or she wrongly recalled a feature that was not initially presented. On the contrary, when the participant recalled a feature using a different phrasing, it was registered as a correct response. This study did not analyze the difference between verbatim and gist retrieval, while it would be interesting for future research to seek possible differences for verbatim and gist recollection rates in hedonic and utilitarian consumption.

8. REFERENCES

Akerlof, G. A., Kranton, R. E. (2000). Economics and identity. *The quarterly journal of economics, CXV*(3), 715-749.

Alba, J. W., & Williams, E. F. (2013). Pleasure principles: A review of research on hedonic consumption. *Journal of Consumer Psychology*, *23*(1), 2–18. https://doi.org/10.1016/j.jcps.2012.07.003

Arnould, E. J., & Price, L. L. (1993). River Magic: Extraordinary Experience and the Extended Service Encounter. *Journal of Consumer Research, 20*(1), 24-45.

Batra, R., & Ahtola, O. T. (1991). Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes. *Marketing Letters*, *6*(1).

Bazerman, M. H., Tenbrunsel, A. E., & Wade-Benzoni, K. (1998). Negotiating with yourself and losing: Making decisions with competing internal preferences. *Academy of Management Review, 23*(2)*,* 225–241.

Bem, D. J. (1972). Self-Perception Theory. *Advances in experimental social psychology, 6,* 1-8.

Bernstein, D. M., & Loftus, E. F. (2009). How to Tell If a Particular Memory Is True or False. *Perspectives on Psychological Science, 4*(4), 370–374. https://doi.org/10.1111/j.1745-6924.2009.01140.x

Bodner, R., & Prelec, D. (2003). Self-Signaling and Diagnostic Utility in Everyday Decision Making. *The psychology of economic decisions.*

Brainerd, C. J., & Reyna, V. F. (2002). Fuzzy-Trace Theory and False Memory. *Current Directions in Psychological Science, 11*(5), 164–169. https://doi.org/10.1111/1467-8721.00192

Bruner, J. (1990). Culture and Human Development: A New Look. *Human Development, 33*(6), 344-355. https://doi.org/10.1159/000276535

Celsi, R. L., Rose, R. L., & Leigh, T. W. (1993). An Exploration of High-Risk Leisure Consumption Through Skydiving. *Journal of Consumer Research, 20*(1), 1-23.

Clancy, S. A., et al. (2000). False Recognition in Women Reporting Recovered Memories of Sexual Abuse. *Psychological Science, 11*(1), 26-31. https://doi.org/10.1111/1467-9280.00210

Conway, M. A. (1990). Autobiographical memory: An introduction. *Open University Press*.

Cotte, J. (1997). Chances, trances, and lots of slots: Gambling motives and consumption experiences. *Journal of Leisure Research, 29(4),* 380-406. https://doi.org/10.1080/00222216.1997.11949805

Crowley, A. E., Spangenberg, E. R., Hughes, K. R., Measuring the Hedonic and Utilitarian Dimensions of Attitudes Toward Product Categories. *Marketing Letters, 3*(3), 239-249.

Dhar, R., & Simonson, I. (1999). Making Complementary Choices in Consumption Episodes: Highlighting versus Balancing. *Journal of Marketing Research, 36*(1), 29-44. https://doi.org/10.1177/002224379903600103

Dijksterhuis, A., Smith, P. K., van Baaren, R. B., & Wigboldus, D. H. J. (2005). The Unconscious Consumer: Effects of Environment on Consumer Behavior. *Journal of Consumer Psychology*, *15(3)*, 193-202.

Dunning, D. (2007). Self-image motives and consumer behavior: How sacrosanct self-beliefs sway preferences in the marketplace. *Journal of Consumer Psychology, 17*(4), 237–249. https://doi.org/10.1016/S1057-7408(07)70033-5

Edwards, D., & Middleton, D. (1986). Conversation and Remembering: Bartlett Revisited. *Applied Cognitive Psychology, 1*, 77–92.

Khan, U., & Dhar, R. (2006). Licensing effect in consumer choice. *Journal of Marketing Research, 43*(2), 259–266. https://doi.org/10.1509/jmkr.43.2.259

Khan, U., Dhar, R., & Wertenbroch, K. (2005). A behavioral decision theory perspective on hedonic and utilitarian choice. *Inside Consumption: Consumer Motives, Goals, and Desires*, 144–163. https://doi.org/10.4324/9780203481295

Lerner, J. S., Small, D. A., & Loewenstein, G. (2004). Heart Strings and Purse Strings: Carryover Effects of Emotions on Economic Decisions. *Psychological Science, 15*(5), 337-341. https://doi.org/10.1111/j.0956-7976.2004.00679.x

Herr, P. M., Sherman, S. J., & Fazio, R. H. (1983). On the consequences of priming: Assimilation and contrast effects. *Journal of experimental social psychology, 19*(4), 323-340. https://doi.org/10.1016/0022-1031(83)90026-4

Hirschman, E. C., & Holbrook, M. B. (1982). Hedonic Consumption: Emerging Concepts, Methods and Propositions. *Journal of Marketing, 46(3)*, 92. https://doi.org/10.2307/1251707

Holbrook, M. B., & Hirschman, E. C. (1982). The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun. *Journal of Consumer Research, 9(2*), 132. https://doi.org/10.1086/208906

Holyoak, K. J., & Simon, D. (1999). Bidirectional Reasoning in Decision Making by Constraint Satisfaction. *Journal of Experimental Psychology, 128*, 3-31.

Hopkinson, G. C., & Pujari, D. (1999). A factor analytic study of the sources of meaning in hedonic consumption. *European Journal of Marketing, 33*(3/4), 273-294. https://doi.org/10.1108/03090569910253053

Hsee, C. K. (1995). Elastic Justification: How Tempting but Task-Irrelevant Factors Influence Decisions. *Organizational Behavioral and Human Decision Process, 62*(3).

Kahneman, D. (1991). Judgment and Decision Making: A Personal View. *Psychological Science, 2*(3), 142-145. https://doi.org/10.1111/j.1467-9280.1991.tb00121.x

Kellogg, R. T. (2007). Fundamentals of Cognitive Psychology. *SAGE Publications,* 153-181.

Kivetz, R., & Simonson, I. (2002). Earning the Right to Indulge: Effort as a Determinant of Customer Preferences Toward Frequency Program Rewards. *Journal of Marketing Research*, XXXIX(May), 155–170.

Kopelman, M. D. (1999). Varieties of false memory. *Cognitive Neuropsychology, 16*(3-5), 197-214. https://doi.org/10.1080/026432999380762

Kunda, Z., & Thagard, P. (1996). Forming Impressions from Stereotypes, Traits, and Behaviors: A Parallel-Constraint-Satisfaction Theory. *Psychological Review, 103*, 284–308. https://doi.org/10.1037/0033-295X.103.2.284

Lascu, D. L. (1991). Consumer Guilt: Examining the Potential of a New Marketing Construct. *Advances in Consumer Research, 18*, 290-295.

Loftus, E. F. (1979). The Malleability of Human Memory: Information introduced after we view an incident can transform memory. *American Scientist 67*(3), 312-320.

Mano, H., & Oliver, R. L. (1993). Assessing the Dimensionality and Structure of the Consumption Experience: Evaluation, Feeling, and Satisfaction. *Journal of Consumer Research, 20*(3), 451-466.

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370–396. https://doi.org/10.1037/h0054346

McGraw, A. P., & Tetlock, P. E. (2005). Taboo Trade-offs, Relational Framing, and the Acceptability of Exchanges. *Journal of Consumer Psychology, 15*(1), 2-15.

McQueen, A., & Klein, W. M. P. (2006). Experimental manipulations of self-affirmation: A systematic review. *Self and Identity, 5*(4), 289–354. https://doi.org/10.1080/15298860600805325

Mogilner, C., Aaker, J., & Kamvar, S. D. (2011). How Happiness Affects Choice. *Journal of Consumer Research, 39,* 429-443.

Monin, B., & Miller, D. T. (2001). Moral Credentials and the Expression of Prejudice. *Journal of Personality and Social Psychology, 81*(1), 33-43. https://doi.org/10.1037/0022-3514.81.1.33

Moulin, C. J. A., et al. (2005). Disordered memory awareness: recollective confabulation in two cases of persistent déjà vecu. *Neuropsychologia, 43*(9), 1362-1378. https://doi.org/10.1016/j.neuropsychologia.2004.12.008

Okada, E. M. (2005). Justification effects on consumer choice of hedonic and utilitarian goods. *Journal of Marketing Research, 42*(1), 43–53. https://doi.org/10.1509/jmkr.42.1.43.56889

Pham, M. T. (1998). Representativeness, Relevance, and the Use of Feelings in Decision Making. *Journal of Consumer Research, 25,* 144-159.

Prelec, D., & Loewenstein, G. (1998). The Red and the Black: Mental Accounting of Savings and Debt. *Marketing Science, 17*(1), 4–28.

Quattrone, G. A., & Tversky, A. (1984). Causal versus Diagnostic Contingencies: On Self-Deception and On the Voter's Illusion. *Journal of personality and social psychology, 46*(2), 237–248. https://doi.org/10.1037/0022-3514.46.2.237

Rajagopal, P., & Montgomery, N. V. (2011). I Imagine, I Experience, I Like: The False Experience Effect. *Journal of Consumer Research, 38*(3), 578–594. https://doi.org/10.1086/660165

Rottenstreich, Y., & Hsee, C. K. (2001). Money, Kisses, and Electric Shocks: On the Affective Psychology of Risk. *Psychological Science*, *12*(3), 185-190.

Schacter, D. L., Coyle, J. T., & Harvard Center for the Study of Mind, Brain, and Behavior (1995). Memory Distortion: How Minds, Brains, and Societies Reconstruct the Past. *Harvard University Press*, 69-90.

Schacter, D. L., Guerin, S. A., Jacques, P. L. S. (2011). Memory distortion: an adaptive perspective. *Trends in Cognitive Sciences, 15*(10), 467-474. https://doi.org/10.1016/j.tics.2011.08.004

Schnider, A. (2008). The Confabulating Mind: How the Brain Creates Reality. *Oxford University Press,* 45-72.

Shultz, T. R., & Lepper, M. R. (1996). Cognitive Dissonance Reduction as Constraint Satisfaction. *Psychological Review, 103*(2), 219–240.

Simon, L., Greenberg, J., & Brehm, J. (1995). Trivialization: The Forgotten Mode of Dissonance Reduction. *Journal of Personality and Social Psychology, 68*(2), 247–260. https://doi.org/10.1037/0022-3514.68.2.247

Simonson, I. (1989). Choice Based on Reasons: The Case of Attraction and Compromise Effects. *Journal of Consumer Research*, *16*(2), 158. https://doi.org/10.1086/209205

Strack, F., Werth, L., & Deutsch, R. (2006). Reflective and Impulsive Determinants of Consumer Behavior. *Journal of Consumer Psychology, 16*(3), 205-216. https://doi.org/10.1207/s15327663jcp1603_2

Strahilevitz, M., & Myers, J. G. (1998). Donations to Charity as Purchase Incentives: How Well They Work May Depend on What You Are Trying to Sell. *Journal of Consumer Research, 24*(4), 434–446. https://doi.org/10.1086/209519

Tulving, E. (1972). Episodic and Semantic Memory. Organization of Memory, 381–403.

Voss, K. E., Spangenberg, E. R., & Grohmann B. (2003). Measuring the Hedonic and Utilitarian Dimensions of Consumer Attitude. *Journal of Marketing Research, XL* (August), 310–320.

Wells, G. L., & Olson, E. A. (2003). Eyewitness testimony. *Annual Review of Psychology, 54*, 277-295.

Wertenbroch, K. (1998). Consumption self-control by rationing purchase quantities of virtue and vice. *Marketing Science, 17*(4), 317–337. https://doi.org/10.1287/mksc.17.4.317

Willer, R., Rogalin, C. L., Conlon, B., & Wojnowicz, M. T. (2013). Overdoing Gender: A Test of the Masculine Overcompensation Thesis. *American Journal of Sociology, 118*(4), 980–1022.

APPENDICES

APPENDIX I: ONLINE SURVEY - SELF-THREAT CONDITION

This first section presents the online survey that tested participants randomly assigned to the self-threat condition. In this version, the even attributes (such as Q6, Q8, etc.) are framed hedonically, whereas the odd attributes (Q5, Q7, etc.) are framed utilitarianly. For each condition, half of the respondents saw this version of the framing of the features, while the other half viewed the opposite. Due to space constraints, in some questions the possible answers have been summarized or shortened as displayed in the Manipulation Efficacy Block. The procedure of the whole survey is explained in the Methodology section. For the same reason, only one of the two possible distraction tasks is being presented.

Start of Block: Introduction

Q1.1 Thank you for taking part in this study.

I am a Master student at Católica Lisbon SBE and I am currently collecting data for my thesis project.
All data gathered will be strictly anonymous and for academic purposes only.
I kindly ask you to pay attention and to answer as honestly as possible.
This questionnaire will take only a few minutes and it has to be answered with no interruptions.

Thank you again for participating!

End of Block: Introduction

Start of Block: Manipulation

Q2.1 Imagine that you just bought for yourself a winter coat, whose characteristics will be shown next. Before walking into the store, you noticed that there was a well-known and highly reliable charitable institution collecting donations.

You have chosen to buy the coat and you refused to donate money to charity.

End of Block: Manipulation

Start of Block: Manipulation efficacy

Q3.1 After your gesture, how ethical do you feel? (from 0 to 10)

Q3.2 How proud do you feel? (from 0 to 10)

Q3.3 How ashamed do you feel? (from 0 to 10)

End of Block: Manipulation efficacy

Start of Block: Attributes presentation

Q4.1 Now you will be presented with the attributes of the coat that you have just bought. **Please read them carefully**, each attribute will be displayed just for a few seconds.

You will be asked about them later in this study.

Q5.2 **Fabricated with quality materials, designed to last longer**

Q6.2 **Removable hood, to have the right style for every occasion**

Q7.2 **Internal removable padded jacket that keeps you warm even in the coldest days**

Q8.2 **3/4 length of the coat that makes you look classy**

Q9.2 **Large outside pockets to carry everything you need**

Q10.2 **Seamed seals that give a smooth design to the jacket**

Q11.2 **Insulation to keep you warm**

Q12.2 **Faux-fur hood for a more sophisticated appearance**

Q13.2 **High collar that covers your neck, keeping it warm**

Q14.2 **Well-affirmed brand that provides you status and exclusiveness**

Q15.2 **Dark-tone color that absorbs the sunlight, keeping you warmer**

Q16.2 **Internal pockets that allow you to walk with carefreeness**

Q17.2 **Outer Gore-Tex shell, which protects your body in every weather**

Q18.2 **Breathable fabric, to always feel and appear at your best**

Q19.2 **3-in-1 design, which allows you to save money for a lighter jacket**

Q20.2 **Ultralight, to move freely and show confidence**

Q21.2 **Slim silhouette that fits your size**

Q22.2 **PFC-free etiquette (it means it has no Per- and Poli-Fluorinated Chemicals) to show how environmental friendly you are**

Q23.2 **Closed internal cuffs, for further protection**

Q24.2 **Front zip, fabricated with the newest and most expensive technology**

Q25.2 **Storm flap over the zip, that prevents water from infiltrating**

Q26.2 **Reflective details that provide a stylish design**

Start of Block: Distraction_Global8Local2

Q27.2
You will now be asked to read a passage from a text.You will be assigned one passage from 10 possible options that vary on their level of interest. The level of interest varies on a scale from 1 not interesting at all to 10 extremely interesting.

Remember that the sample of this study is very heterogeneous with participants having lots of individual differences and dissimilarities. They live in different and distant places from you, have a wide age range and different levels of education.
So it very likely that the previous or the next participant are very different from you.

Please rate how close from the other participants do you feel you are (from 1 to 9)

Q27.3
On average, the 10 passages presented in this study are rated with **8 points** regarding how interesting they are.
The **previous participant** was assigned a passage rated with **2 points** in interest.
Q27.4 You were assigned with a passage from "Heuristics and Biases" a 2002 book from Gilovich, Griffin and Kahneman.
This passage was rated with 5 points regarding how interesting it is.
Before you read the passage please rate

	Not at all 1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	Totally 7 (7)
How satisfied with the reading passage you have been assigned, in comparison to the other readings? (4)	○	○	○	○	○	○	○
In comparison to the other readings that you could have been asked to do, how happy are you with your reading (2)	○	○	○	○	○	○	○

How fair do you think it is that you received the reading that you did? (3)	○	○	○	○	○	○	○
How disappointed are you that you were assigned the reading that you were? (5)	○	○	○	○	○	○	○
How lucky do you think you were with the reading you were assigned? (6)	○	○	○	○	○	○	○

Q27.5
Please read the passage:
"The program of research now known as the heuristics and biases approach began with a survey of 84 participants at the 1969 meetings of the Mathematical Psychology Society and the American Psychological Association (Tversky & Kahneman, 1971). The respondents, including several authors of statistics texts, were asked realistic questions about the robustness of statistical estimates and the replicability of research results. The article commented tongue-in-cheek on the prevalence of a belief that the law of large numbers applies to small numbers as well: Respondents placed too much confidence in the results of small samples and their statistical judgments showed little sensitivity to sample size.
The mathematical psychologists who participated in the survey not only should have known better – they did know better. Although their intuitive guesses were off the mark, most of them could have computed the correct answers on the back of an envelope. These sophisticated individuals apparently had access to two distinct approaches for answering statistical questions: one that is spontaneous, intuitive, effortless, and fast; and another that is deliberate, rule-governed, effortful, and slow."

Please rate how interesting you find the passage (from 0 to 10)

End of Block: Distraction_Global8Local2

Start of Block: Recollection

Q29.1 **Please write below**, in casual order, **all the attributes you remember** about the coat you just bought, refusing to donate money to charity.

- ○ 1st attribute (1) _____
- ○ 2nd attribute (2) _____
- ○ 3rd attribute (3) _____
- ○ 4th attribute (4) _____
- ○ 5th attribute (5) _____
- ○ 6th attribute (6) _____
- ○ 7th attribute (7) _____
- ○ 8th attribute (8) _____
- ○ 9th attribute (9) _____
- ○ 10th attribute (10) _____
- ○ 11th attribute (11) _____
- ○ 12th attribute (12) _____
- ○ 13th attribute (13) _____
- ○ 14th attribute (14) _____
- ○ 15th attribute (15) _____
- ○ 16th attribute (16) _____
- ○ 17th attribute (17) _____
- ○ 18th attribute (18) _____
- ○ 19th attribute (19) _____
- ○ 20th attribute (20) _____
- ○ 21st attribute (21) _____
- ○ 22nd attribute (22) _____

Page Break

Q29.2 How much would you be willing to pay for that coat, in euros?

	0 100 200 300 400 500 600 700 800 900 1000
€ ()	

Q29.3 Considering the definition below, please rate the coat on a utilitarian-hedonic scale, where 0 would be entirely utilitarian good and 10 would be entirely hedonic good.

"Hedonic goods are those that involve multisensory dimensions and provide consumption of experience, fun, pleasure and excitement." "Utility goods are fundamentally instrumental and their purchase is motivated by functional aspects of the product." (Khan, Dhar, & Wertenbroch, 2005)

	Fully utilitarian Fully hedonic 0 1 2 3 4 5 6 7 8 9 10
Utilitarian / Hedonic ()	

End of Block: Recollection

Start of Block: Demographics

Q30.1 Please indicate your gender:

- ○ Male (1)
- ○ Female (2)

Q30.2 Age:

_____

Q30.3 Nationality:

▼ Afghanistan (1) ... Zimbabwe (1357)

Q30.4 Please indicate your level of education:

- ○ Primary or middle school
- ○ High school graduate
- ○ Professional degree
- ○ Bachelor degree
- ○ Master degree
- ○ Doctorate

Q30.5 What statement best describes your current professional situation?

- ○ Employed
- ○ Unemployed
- ○ Self-employed
- ○ Student
- ○ Retired

End of Block: Demographics

APPENDIX II: SAMPLE DESCRIPTIVES

Frequency Table

Please indicate your gender:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	150	65,5	65,5	65,5
	Female	79	34,5	34,5	100,0
	Total	229	100,0	100,0	

Table 2: Study sample: gender

Please indicate your level of education:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary or middle school	1	,4	,4	,4
	High school graduate	28	12,2	12,2	12,7
	Professional degree	12	5,2	5,2	17,9
	Bachelor degree	128	55,9	55,9	73,8
	Master degree	53	23,1	23,1	96,9
	Doctorate	7	3,1	3,1	100,0
	Total	229	100,0	100,0	

Table 3: Study sample: education

What statement best describes your current professional situation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	127	55,5	55,7	55,7
	Unemployed	26	11,4	11,4	67,1
	Self-employed	22	9,6	9,6	76,8
	Student	50	21,8	21,9	98,7
	Retired	3	1,3	1,3	100,0
	Total	228	99,6	100,0	
Missing	System	1	,4		
Total		229	100,0		

Table 4: Study sample: professional situation

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Age:	229	50	18	68	32,32	11,083	122,834	1,211	,161	,880	,320
Valid N (listwise)	229										

Table 5: Study sample: age distribution

APPENDIX III: STATISTICAL ANALYSIS

III.a. MANIPULATION: INDEPENDENT SAMPLES T-TEST

T-Test

Group Statistics

	condition_dummy	N	Mean	Std. Deviation	Std. Error Mean
After your gesture, how ethical do you feel?	Self Aff	112	8,06	1,762	,166
	Self Threat	117	4,80	3,038	,281
How proud do you feel?	Self Aff	112	7,93	2,233	,211
	Self Threat	117	3,14	2,556	,236
How ashamed do you feel?	Self Aff	112	1,64	2,431	,230
	Self Threat	117	5,90	2,928	,271

Table 6: Manipulation efficacy - group statistics

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
After your gesture, how ethical do you feel?	Equal variances assumed	48,719	,000	9,874	227	,000	3,259	,330	2,609	3,909
	Equal variances not assumed			9,982	187,634	,000	3,259	,326	2,615	3,903
How proud do you feel?	Equal variances assumed	7,910	,005	15,082	227	,000	4,792	,318	4,166	5,418
	Equal variances not assumed			15,126	225,144	,000	4,792	,317	4,168	5,416
How ashamed do you feel?	Equal variances assumed	8,259	,004	-11,936	227	,000	-4,255	,356	-4,957	-3,552
	Equal variances not assumed			-11,984	222,571	,000	-4,255	,355	-4,954	-3,555

```
RECODE Q30.1 (1=1) (ELSE=0) INTO gender.
VARIABLE LABELS  gender 'gender'.
EXECUTE.
T-TEST GROUPS=condition(1 0)
  /MISSING=ANALYSIS
  /VARIABLES=Q3.1 Q3.2 Q3.3 gender
  /CRITERIA=CI(.95).
```

Table 7: Manipulation efficacy - significance

III.b. RECOLLECTION OF ATTRIBUES: REPEATED MEASURES ANOVA

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	hed_util	correct_false	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
hed_util	Linear		,375	1	,375	,295	,587	,001	,295	,084
hed_util * condition	Linear		130,183	1	130,183	102,455	,000	,311	102,455	1,000
Error(hed_util)	Linear		288,435	227	1,271					
correct_false		Linear	2743,111	1	2743,111	801,938	,000	,779	801,938	1,000
correct_false * condition		Linear	14,587	1	14,587	4,264	,040	,018	4,264	,538
Error (correct_false)		Linear	776,477	227	3,421					
hed_util * correct_false	Linear	Linear	,466	1	,466	,384	,536	,002	,384	,095
hed_util * correct_false * condition	Linear	Linear	134,781	1	134,781	110,939	,000	,328	110,939	1,000
Error (hed_util*correct_false)	Linear	Linear	275,785	227	1,215					

a. Computed using alpha = ,05

Table 8: Repeated Measures ANOVA - Within-Subjects Contrasts

Multivariate Tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
hed_util	Pillai's Trace	,001	,295[b]	1,000	227,000	,587	,001	,295	,084
	Wilks' Lambda	,999	,295[b]	1,000	227,000	,587	,001	,295	,084
	Hotelling's Trace	,001	,295[b]	1,000	227,000	,587	,001	,295	,084
	Roy's Largest Root	,001	,295[b]	1,000	227,000	,587	,001	,295	,084
hed_util * condition	Pillai's Trace	,311	102,455[b]	1,000	227,000	,000	,311	102,455	1,000
	Wilks' Lambda	,689	102,455[b]	1,000	227,000	,000	,311	102,455	1,000
	Hotelling's Trace	,451	102,455[b]	1,000	227,000	,000	,311	102,455	1,000
	Roy's Largest Root	,451	102,455[b]	1,000	227,000	,000	,311	102,455	1,000
correct_false	Pillai's Trace	,779	801,938[b]	1,000	227,000	,000	,779	801,938	1,000
	Wilks' Lambda	,221	801,938[b]	1,000	227,000	,000	,779	801,938	1,000
	Hotelling's Trace	3,533	801,938[b]	1,000	227,000	,000	,779	801,938	1,000
	Roy's Largest Root	3,533	801,938[b]	1,000	227,000	,000	,779	801,938	1,000
correct_false * condition	Pillai's Trace	,018	4,264[b]	1,000	227,000	,040	,018	4,264	,538
	Wilks' Lambda	,982	4,264[b]	1,000	227,000	,040	,018	4,264	,538
	Hotelling's Trace	,019	4,264[b]	1,000	227,000	,040	,018	4,264	,538
	Roy's Largest Root	,019	4,264[b]	1,000	227,000	,040	,018	4,264	,538
hed_util * correct_false	Pillai's Trace	,002	,384[b]	1,000	227,000	,536	,002	,384	,095
	Wilks' Lambda	,998	,384[b]	1,000	227,000	,536	,002	,384	,095
	Hotelling's Trace	,002	,384[b]	1,000	227,000	,536	,002	,384	,095
	Roy's Largest Root	,002	,384[b]	1,000	227,000	,536	,002	,384	,095
hed_util * correct_false * condition	Pillai's Trace	,328	110,939[b]	1,000	227,000	,000	,328	110,939	1,000
	Wilks' Lambda	,672	110,939[b]	1,000	227,000	,000	,328	110,939	1,000
	Hotelling's Trace	,489	110,939[b]	1,000	227,000	,000	,328	110,939	1,000
	Roy's Largest Root	,489	110,939[b]	1,000	227,000	,000	,328	110,939	1,000

a. Design: Intercept + condition
Within Subjects Design: hed_util + correct_false + hed_util * correct_false

b. Exact statistic

c. Computed using alpha = ,05

Table 9: Repeated Measures ANOVA – Multivariate Table

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
hed_util	Sphericity Assumed	,375	1	,375	,295	,587	,001	,295	,084
	Greenhouse-Geisser	,375	1,000	,375	,295	,587	,001	,295	,084
	Huynh-Feldt	,375	1,000	,375	,295	,587	,001	,295	,084
	Lower-bound	,375	1,000	,375	,295	,587	,001	,295	,084
hed_util * condition	Sphericity Assumed	130,183	1	130,183	102,455	,000	,311	102,455	1,000
	Greenhouse-Geisser	130,183	1,000	130,183	102,455	,000	,311	102,455	1,000
	Huynh-Feldt	130,183	1,000	130,183	102,455	,000	,311	102,455	1,000
	Lower-bound	130,183	1,000	130,183	102,455	,000	,311	102,455	1,000
Error(hed_util)	Sphericity Assumed	288,435	227	1,271					
	Greenhouse-Geisser	288,435	227,000	1,271					
	Huynh-Feldt	288,435	227,000	1,271					
	Lower-bound	288,435	227,000	1,271					
correct_false	Sphericity Assumed	2743,111	1	2743,111	801,938	,000	,779	801,938	1,000
	Greenhouse-Geisser	2743,111	1,000	2743,111	801,938	,000	,779	801,938	1,000
	Huynh-Feldt	2743,111	1,000	2743,111	801,938	,000	,779	801,938	1,000
	Lower-bound	2743,111	1,000	2743,111	801,938	,000	,779	801,938	1,000
correct_false * condition	Sphericity Assumed	14,587	1	14,587	4,264	,040	,018	4,264	,538
	Greenhouse-Geisser	14,587	1,000	14,587	4,264	,040	,018	4,264	,538
	Huynh-Feldt	14,587	1,000	14,587	4,264	,040	,018	4,264	,538
	Lower-bound	14,587	1,000	14,587	4,264	,040	,018	4,264	,538
Error (correct_false)	Sphericity Assumed	776,477	227	3,421					
	Greenhouse-Geisser	776,477	227,000	3,421					
	Huynh-Feldt	776,477	227,000	3,421					
	Lower-bound	776,477	227,000	3,421					
hed_util * correct_false	Sphericity Assumed	,466	1	,466	,384	,536	,002	,384	,095
	Greenhouse-Geisser	,466	1,000	,466	,384	,536	,002	,384	,095
	Huynh-Feldt	,466	1,000	,466	,384	,536	,002	,384	,095
	Lower-bound	,466	1,000	,466	,384	,536	,002	,384	,095
hed_util * correct_false * condition	Sphericity Assumed	134,781	1	134,781	110,939	,000	,328	110,939	1,000
	Greenhouse-Geisser	134,781	1,000	134,781	110,939	,000	,328	110,939	1,000
	Huynh-Feldt	134,781	1,000	134,781	110,939	,000	,328	110,939	1,000
	Lower-bound	134,781	1,000	134,781	110,939	,000	,328	110,939	1,000
Error (hed_util*correct_false)	Sphericity Assumed	275,785	227	1,215					
	Greenhouse-Geisser	275,785	227,000	1,215					
	Huynh-Feldt	275,785	227,000	1,215					
	Lower-bound	275,785	227,000	1,215					

a. Computed using alpha = ,05

Table 10: Repeated Measures ANOVA - Within-Subjects Effects

Tests of Between-Subjects Effects

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	2833,703	1	2833,703	850,598	,000	,789	850,598	1,000
condition	14,227	1	14,227	4,271	,040	,018	4,271	,539
Error	756,234	227	3,331					

a. Computed using alpha = ,05

Table 11: Repeated Measures ANOVA - Between-Subjects Effects

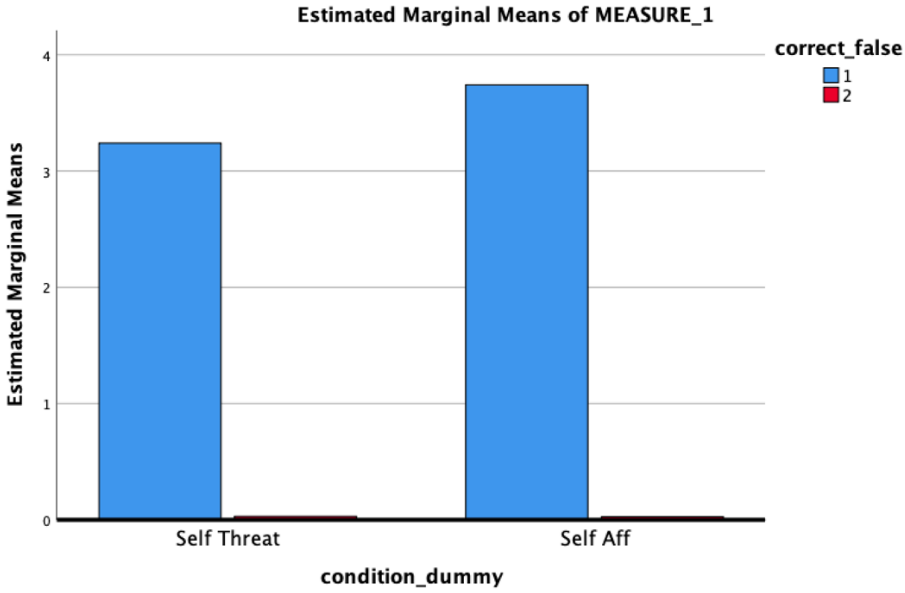

Figure 2: Average Correct versus False Recalls

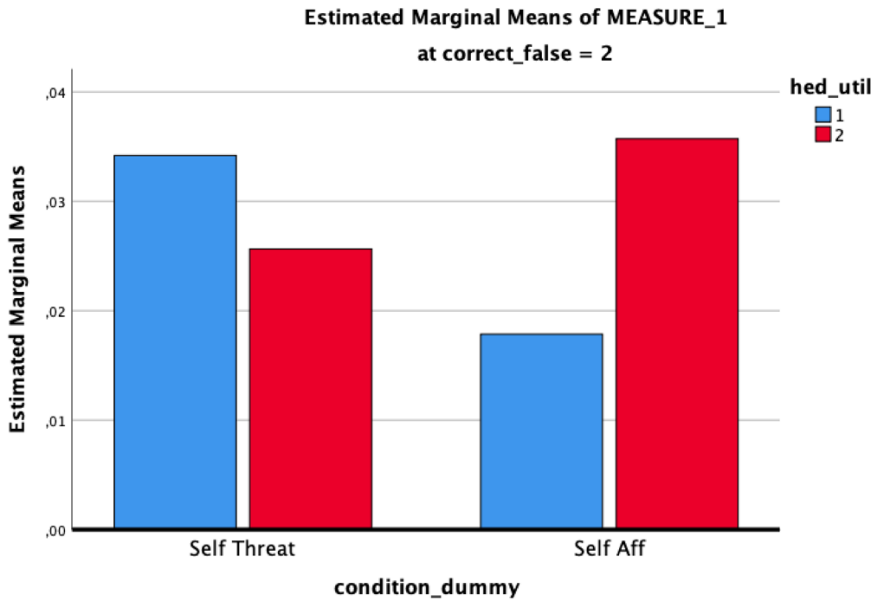

Figure 3: False Recalls - Hedonic versus Utilitarian

III.c. WTP AND PERCEPTION OF THE PRODUCT

T-Test

Group Statistics

	condition_dummy	N	Mean	Std. Deviation	Std. Error Mean
How much would you be willing to pay for that coat, in euros? - €	Self Aff	112	391,7768	210,7263	19,91177
	Self Threat	117	239,0513	153,8406	14,22257
Considering the definition below, please rate the coat on a utilitarian-hedonic scale, where 0 would be entirely utilitarian good and 10 would be entirely hedonic good. "Hedonic goods are those that involve multisensory dimensions and provide consumption of experience, fun, pleasure and excitement." "Utility goods are fundamentally instrumental and their purchase is motivated by functional aspects of the product." (Khan, Dhar, & Wertenbroch, 2005) - Utilitarian / Hedoni	Self Aff	112	6,2116	2,62554	,24809
	Self Threat	117	4,1718	2,13666	,19753

Table 12: WTP and perception: t-test statistics

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
How much would you be willing to pay for that coat, in euros? - €	Equal variances assumed	24,506	,000	6,283	227	,000	152,7255	24,30662	104,8300	200,6210
	Equal variances not assumed			6,241	202,675	,000	152,7255	24,46957	104,4779	200,9731
Considering the definition below, please rate the coat on a utilitarian-hedonic scale, where 0 would be entirely utilitarian good and 10 would be entirely hedonic good. "Hedonic goods are those that involve multisensory dimensions and provide consumption of experience, fun, pleasure and excitement." "Utility goods are fundamentally instrumental and their purchase is motivated by functional aspects of the product." (Khan, Dhar, & Wertenbroch, 2005) - Utilitarian / Hedoni	Equal variances assumed	3,781	,053	6,461	227	,000	2,03981	,31572	1,41770	2,66192
	Equal variances not assumed			6,432	214,037	,000	2,03981	,31713	1,41472	2,66490

Table 13: WTP and perception: Independent Samples T-Test