Universidade Nova de Lisboa

ISEGI – Instituto Superior de Estatística e Gestão de Informação

IMPULSIVE BUYING AND SELF-REGULATION: THE IMPACT OF HETERO-IMPULSIVITY ON CONSUMERS' BUYING BEHAVIOR

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*This master thesis is the result of my work as research assistant of the project PTDC/EGE-GES/103899/2008 – "O Papel das Expectativas dos Consumidores nos Processos de Decisão" supervised by Profª Rita Vale and sponsored by FCT – Fundação para a Ciência e Tecnologia.

To my parents, which I never imagine would be so important at this stage of my life.

To my supervisor, who I will always remember.

To LERNE - Laboratory for Experimental Research iN Economics and Management, which I hope can give an important contribution to prove that for consumers “1+1” can equal “2”, but also “3”, “1”, and even zero.

Abstract

Using an experimental study we test the relation between people's beliefs in terms of impulsive buyers' personal characteristics and their own tendency to engage in impulsive buying behavior when in a situation of ego depletion. Contrary to the expectations - participants with positive hetero-impulsivity beliefs would show highest impulsive buying intentions - we found that participants with negative hetero-impulsivity beliefs were the ones showing the highest impulsive consumption intentions when in an ego depletion situation. To explain these striking results we raise the hypothesis that participants with negative hetero-impulsivity beliefs – who think that people who behave on impulse share undesirable characteristics – will use impulsive consumption as a coping strategy to deal with a situation of ego depletion, more frequently than participants with positive and neutral hetero-impulsivity beliefs, thus, developing beliefs about behaving on impulse according with the way they behave when confronted with situations of ego depletion. In order to explain the finding that participants with neutral hetero-impulsivity beliefs were the ones showing the lowest impulsive consumption intentions when in an ego depletion situation we hypothesize a biunivocal relationship between beliefs and behavior: not only consumers being easily tempted originates negative beliefs about people that buy on impulse, but also positive beliefs about people that buy on impulse facilitate consumers being easily tempted. In order to test this biunivocal relationship we propose a follow-up study which will allow us, through the measure of self-regulation power, to better understand the relation between hetero-impulsivity beliefs and impulsive buying behavior.

Abstract

Utilizando um estudo experimental testámos a relação entre as crenças dos consumidores relativas às características pessoais dos compradores impulsivos e a sua própria tendência para comprar de forma impulsiva em situações de falta de auto-controlo. Ao contrário do que esperávamos – participantes com crenças positivas demonstrariam intenções de compra impulsiva superiores – verificámos que os participantes com crenças negativas foram os que demonstraram intenções de compra impulsiva superiores quando em situações de falta de auto-controlo. De forma a explicar estes resultados surpreendentes lançámos a hipótese que os participantes com crenças negativas – que pensam que as pessoas que compram por impulso partilham características indesejáveis – irão utilizar a compra impulsiva como um estratégia de *coping* para lidar com situações de falta de auto-controlo, mais frequentemente que participantes com crenças positivas ou neutras, assim, desenvolvendo cranças acerca da compra impulsiva de acordo com a forma como reagem a situações de falta de auto-controlo. De forma a explicar a evidência de que os participantes com crenças neutras eram aqueles que demonstraram intenções de compra impulsiva inferiores quando situações de falta de auto-controlo hipotetizámos uma relação bionívoca entre crenças e comportamento: não só o facto de o consumidor ser facilmente tentado origina crenças negativas acerca das pessoas que compram por impulso, mas também as crenças positivas acerca das pessoas que compram por impulso facilitam que os consumidores se permitam ser facilmente tentados. De forma a testar esta relação bionívoca propomos a realização de um segundo estudo que nos permitirá, através da medição dos recursos de auto-controle do participante, a melhor compreender a relação entre as crenças e a compra por impulso.

LIST OF TABLES:

LIST OF FIGURES:

CONTENTS

1. INTRODUCTION

Impulsive buying has been object of study for nearly fifty years (Rook, 1987). Scales to measure it were created (Puri, 1996; Rook & Fisher, 1995) and considerable enhancement has been achieved in terms of explaining its definition (Rook, 1987), determinants (Beatty & Ferrel, 1998), and moderators (Rook & Fisher, 1995; Kwak et al., 2006). Nevertheless, much remains to be explained. Although considerable advancement in terms of describing the impulsive buying behavior has been achieved, a new level of research (Baumeister, 2002; Vohs & Faber, 2007) aims to relate impulsive buying behavior with consumers' self-regulation levels. Baumeister et al. (1994), argue that, in some cases, lack of self-regulation is due to peoples' enrolment in a process of acquiescence where "people often seem to arrange to lose control" (p.250), letting themselves to be "seduced" by manipulating consent instead of being "raped" by irresistible forces which overwhelm resistance. In our study we will adopt this "seductive" approach, arguing that there are hetero-impulsivity beliefs about low and high regulators that determine the probability that consumers' will let themselves be seduced. In other words, we will test how a moderating factor - consumers' own perceptions of impulsive buyers - can influence the relation between consumers' own levels of self-regulation and likelihood of engaging in impulsive behaviors. Proving this relation can be of major importance in terms of understanding the real determinants of consumers' impulsive buying and consequently to learn how to deal and influence this pattern of consumption.

Recent studies (Coelho do Vale, 2009) showed us that people who engage in impulsive consumption are perceived, by others, to experience higher positive and lower negative affect than those who do not, positively contributing to happiness. Also, conceptual beliefs about human values (Bain et al., 2006) have been shown to be related with the importance of values for individuals and groups across cultures, determining people's reaction to different situations and acting as guiding principles in their lives. Lederman et al.

(2004) points that (1) beliefs can shape the way we behave, that (2) 'believing is seeing', and that (3) people tend to act accordingly to the meanings they construct through their day to day social interaction, even if those meanings some time constitute myths that do not have a correspondence with reality. Such is the case with the myth that most college students' drink dangerously, which makes students not to recognize their drinking as excessive because of their biased perceptions relative to those around them (Lederman et al., 2004).

The main motivation of our study is the idea that the study of impulsive buying could be greatly enhanced through the analysis of the relation between people's beliefs in terms of impulsive buyers personal characteristics and their own tendency to engage in impulsive buying behavior when in a situation of ego depletion (Baumeister et al. 1998), or lack of self-regulatory resources. Namely, we aim to understand if beliefs people have about the existence of personal characteristics by those who engage in impulsive consumption, can influence consumers own tendency to engage in that same pattern of consumption. Evidence for this relation would highlight the importance of beliefs in explaining why consumers often engage in impulsive behaviors. Thus, the central question of the present research is to analyze to what extent beliefs that people share about those that engage in impulsive consumption will act as a positive mediating effect in the relation between the consumers' levels of self-regulation and their own impulsive consumption behavior.

This is especially interesting because ads to the existent literature (Rook, 1987, Beatty & Ferrel, 1998, Hoch & Loewenstein, 1991, Puri, 1996, Vohs & Faber, 2007), offering another explanation why do people so often engage in impulsive consumption.

This dissertation is organized as follows. Chapter 2 will provide a brief literature review on the main concepts to be studied: we will explore the concept of self-regulation; present the concept of impulsive buying behavior; describe the mediating factor of our study - consumers' hetero-impulsivity beliefs; and present the conceptual framework and hypotheses.

In Chapter 3 we will describe the experimental design of the two studies that were conducted. In Chapter 4 we will present the main results' analysis and discussion. In chapter 5 we will draw the main conclusions and limitations of the study.

2. LITERATURE REVIEW

2.1. SELF-REGULATION

2.1.1. Introduction

Loewensteins' (1996) seminal article pointed one of the major, and at the time untackled, challenges confronting decision theory – understanding discrepancies between self-interest and behavior. According with the author, the disjunctions between perceived self-interest and behavior would result from the action of visceral factors related with drive states, moods and emotions, and physical pain. These visceral factors would, when at sufficient levels of intensity, cause people to behave contrary to their long-term self-interest. Also, people would tend to underweight, or even ignore, the impact that these visceral factors can have in their past and future behavior, as well as in other peoples' behavior.

The last decade as witnessed the existence of significant research ventures, which have helped to explain self-control and create a robust theory of self-regulation. Accordingly, we select and theoretically develop three of the main findings of this last decade of research: the assumption that all acts of self-regulation draw a common and limited resource (Baumeister et al., 1998; Vohs et al., 2008); the assumption that the capacity for self-regulation resembles a muscle whose resistant to fatigue should improve with practice (Muraven et al., 1999; Muraven & Baumeister, 2000); and the assumption that individuals are motivated to limit their use of self-control resources, especially when they are depleted (Vohs & Heatherton, 2000; Muraven et al., 2006). In the next section we present and elaborate on these three different perspectives.

2.1.2. Self-regulation as a Scarce Resource

Initially, three competing models (Baumeister et al., 1998, Muraven et al., 1999) predicted different results for people when they engage in two seemingly unrelated acts of self-control within a short time. The *skill model*, viewed self-regulation essentially as a skill that people gradually develop over long periods of time, in order to regulate themselves. This skill would remain constant across two consecutive acts of self-control within a short time, although small and gradual improving effects would take course in the long run. A second model, the *knowledge model*, considers self-regulation as essentially a knowledge structure that tells us how to alter our responses and states. Thus, an initial act of self-control should prime this schema, thereby facilitating a subsequent act of self-control. A third model, the *energy model*, states that self-regulation resembles energy, which means that any act of self-regulation involves an act of volition that expends energy and depletes the supply available. This would impair subsequent acts of self-control.

These three models will predict distinct results in terms of changes in self-control effectiveness between two consecutive exertions of self-control within a short time. Modeling self-control as a skill implies no short time changes, modeling it as a knowledge structure implies a short time increase and modeling it as energy a short time decrease.

Several studies have showed that seemingly unrelated activities such as coping with stress (Muraven & Baumeister, 2000) making choices (Baumeister et al., 1998), regulating affect (Baumeister et al., 1998; Muraven & Baumeister, 2000; Tice, Bratslavsky & Baumeister, 2001), resisting temptations (Baumeister et al., 1998, Muraven & Baumeister, 2000), complex thinking (Schmeichel, Baumeister & Vohs, 2003) and self-presentation and impression management (Vohs, Baumeister & Ciarocco, 2005) all draw on the same common and limited resource. This resource has been showed to diminish

across two short time consecutive acts involving self-control, supporting the strength or energy self-control model better than the other two. This finding was replicated later in almost 60 published studies (Vohs, 2006) and remains one of the most robust finding concerning the nature of the self-regulation process.

2.1.3. Self-regulation as a Muscle

Additional empirical evidence made by Muraven and colleagues (Muraven, Baumeister & Tice, 1999; Muraven & Baumeister, 2000) sustained a model where characteristics of the *energy* (short run depletion) and *skill models* (long run improving) would be combined, creating a *hybrid model*, in which self-control resemble a muscle. Just like a muscle, self-control should diminish after initial exertion and perform poorly in the short run, but, and also like a muscle, self-control should become stronger in the long run with the exercise of self-control activities (Muraven, Baumeister & Tice, 1999).

According with the *energy model*, every act of self-regulation involves an amount of energy that depletes the supply available and a decrease in effectiveness of self-control following an initial act of self-control, indicating that after an act of self-control, the self's crucial resources are depleted. Additionally, and coherent with the *skill model*, Muraven, Baumeister & Tice (1999) showed that self-control exercise and practice can reduce vulnerability to fatigue in the long run, increasing stamina and diminishing the decrease of self-control depletion caused by a single exertion. In their study, the authors showed that compared with a no self-control exercise control group, participants who performed self-control exercises showed a significant improvement in terms of self-regulatory capacity in the long run, measured by quitting later in a hand-grip exercise after a thought suppression exercise.

Thus, and as well as a muscle, besides showing short-term exhaustion and replenishment after rest, the self's crucial resources are also able to grow stronger through regular exercise (Muraven, Baumeister & Tice, 1999; Muraven & Baumeister, 2000).

More recently, the stamina model of self-regulation (operationalized in terms of decrements in handgrip ability) was used as a measure of self-regulation in order to prove that effortful self-presentation can provoke regulatory resources depletion (Vohs, Baumeister & Ciarocco, 2005). Accordingly, the authors used differences in terms of change in handgrip ability (differences in length of time between two handgrip-squeezing tasks) as a proxy of self-regulation stamina, and found an ego depletion effect caused by the exercise of self-presentation according to counter normative patterns. Thus, when participants made a self-presentation contrary to gender norms (e.g., presentation of outstanding accomplishments by women and presentation of outstanding interpersonal qualities by men), the differences in length of time participants squeezed a handgrip from pre- to post-manipulation was negative (length of time decreased), on the contrary, when participants made a self-presentation according to gender norms (e.g., presentation of outstanding interpersonal qualities by women and presentation of outstanding accomplishments by men), the differences in length of time participants squeezed a handgrip from pre- to post-manipulation was positive (length of time increased). This evidences support the model of self-regulation as a muscle, showing that, as a muscle, self-regulation can decrease in terms of performance immediately after the exertion of an act of self-regulation.

2.1.4. Self-regulation as a Conservation Process

Besides being depleted by past acts of self-regulation and growing stronger through repeated exercise, more recent research (Muraven, Shmueli & Berkley, 2006) also

supports the assumption that people can act in terms of self-regulation as if they are managing a scarce resource, activating it according with the needs they actually have or plan to have in the future. Accordingly, self-regulation can be modeled through a conservation model.

In support of this assumption, Vohs & Heatherton (2000) showed that the existence of chronic inhibitions such as dieting decrease ability to self-regulate in conditions requiring effortful self-regulation towards tempting food. Accordingly, the authors found greatest self-regulatory resource depletion among chronic dieters who were seated next to candies and were told to "help themselves", in comparison with chronic dieters who were seated next to candies and were told "don't touch". In the non-dieters sample, no differences were found between the "help themselves" and the "don't touch" conditions. This finding shows that only people who possess inhibitions about engaging in a motivated response become disinhibited as a result of situational demands that deplete self-regulatory resources, thus, supporting a conservation model of self-regulation.

Another stream of evidence towards a conservation model of self-regulation are the results obtained by Tice et al. (2001), that showed that emotional distress regulation precedes impulse control. In their study, the authors showed that when people believed they could change their bad mood, they indulge immediate impulses to make themselves feel better, giving short-term affect regulation priority over other self-regulatory goals. Their results suggest that peoples' breakdowns in terms of self-regulation due to emotional distress depend on strategic, even purposive shifts in priorities that make affect regulation to precede impulse control. This pattern of behavior resembles the management of a scarce resource and is also coherent with an economic model of self-regulation.

The two streams of evidence referred previously where the first supporting findings of a conservation/economic perspective on self-regulation that gain a last and decisive robustness through the findings of Muraven, Shmueli & Berkley (2006), which showed that anticipating exerting self-control in the future can negatively affect the exertion of acts of self-regulation in the present. Based on the assumption that the motivation to exert self-control and the rewards people receive for exerting self-control moderate the relationship between depletion and self-control performance (Muraven & Slessareva, 2003), the authors found that depleted participants who anticipated exerting self-control in the future showed lower performances in an intervening test of self-control than participants who were not depleted, and more poorly than those who did not expect to exert self-control in the future. Establishing a link between the study of self-control and the economic perspectives related with the endowment effect of utility (Tversky and Kanheman, 1981), the authors found evidence that, as well as with material resources, self-control resources losses loom larger than gains. Thus, the authors showed that a loss of self-control strength is given more weight than a comparable gain, mostly when people feel lack of the resource and most of all, when people expect to need the resource in the near future. According, showing lack of self-control in many situations can be due not to the fact that people are not able but to the fact that they are not welling to overcome the impulse (Muraven, Shmueli & Berkley, 2006) and engage in a process of *aquiescence* (Baumeister, Heatherton & Tice, 1994), where they let themselves indulge in acts of impulsive nature.

2.1.5. Self-regulation as a Dynamic Resource

The three bulks of research described above all point to a dynamic modeling of self-regulation.

Accordingly, self-control is viewed simultaneously as (1) a limited and common resource, used and depleted through different acts of volition such as making choices, self-regulating and doing active responses (Baumeister et al., 1998; Vohs et al., 2008); (2) resembling a muscle whose energy can be depleted by an act of self-control but whose stamina and resistance to fatigue can be improved through subsequent acts (Muraven, Baumeister & Tice, 1999; Muraven & Baumeister, 2000); (3) and used according with a conservation/economic perspective, where past and future acts of exerting self-control affect the exertion of acts of self-regulation in the present (Muraven, Shmueli & Berkley, 2006).

The implications of self-regulation as a dynamic resource are straightforward for the study of impulsive buying. They have been already explored conceptually (Baumeister, 2007) and empirically (Vohs & Faber, 2007), results pointing that consumers' in a state of ego depletion are more likely to buy impulsively.

2.2. IMPULSIVE BUYING

The study of impulsive buying can be rooted in the seminal studies of Mischel and colleagues about children capacity to delay gratification (Mischel, 1966; Mischel, 1974), an early childhood competence whose lack of was shown to relate with adult failure to learn effective impulse control, defective conception of future time, and negative future consequences (Mischel, 1974).

In terms of the marketing literature, the first insights about the phenomena of impulsive buying were introduced by Bellenger et al. (1978), in a study where they defined a pragmatic and consensual definition of impulse buying "in terms of whether the purchaser made the decision to purchase prior to or after entering the store" (p. 16).

Additionally, the authors were also able to show that the percentage of purchases that were considered impulsive buying (according with the definition) varied according type of product and within type of product, according to shopper characteristics such as age and race. In other words, the authors showed that there are products that are bought on impulse more often than others and that the percentage of products bought on impulse in each type varies according with the age and race of the consumers. These findings opened a new research path in the study of impulsive buying, because they were able to show that, although it might be true that any product can be bought on impulse, it was also certainly truth that the phenomena is more prevalent in certain categories of products and with certain types of consumers. This research path was recently reemployed by Jones et al. (2003), who showed that impulsive buying tendency is product category specific, which means that certain consumers can show impulsive buying behavior for certain products but not for others.

The idea that impulsive buying varies by product (Bellenger et al., 1978; Jones et al., 2003) was followed and probably originated the concept of hedonic consumption (Hirschman & Holbrook, 1982; Holbrook & Hirschman, 1982), whose birth called the attention to the symbolic and subjective aspects of consumption, namely the ones related with the multisensory, fantasy and emotive aspects of consumers' experience with products. Accordingly to Hirschman and Holbrook (1982), consumers not only derive value from products through the products' tangible and utilitarian attributes (e.g., ironing with an iron, cooking with a microwave, going from one place to the other with a car), but they also derive fantasies, feelings and fun from the consumption experience (e.g., getting emotional while seeing a play, feeling elegant in a new suit, attractive with a certain perfume). These multisensory and emotional responses will be more present in certain product classes than others (e.g., going to the cinema vs. buying a laundry machine), but

many times, the emotional response will dominate the utilitarian motives in the choice of products (Hirschman & Holbrook, 1982). An example of this phenomenon would be the selection of brands that are inferior in terms of their tangible characteristics because of subjectively perceived reputation (Levy, 1959; Hirschman & Holbrook, 1982). Thus, hedonic consumption would help to explain impulsive buying, by showing that certain products are able to elicit emotional responses in certain consumers which will dominate utilitarian motives and determine the decision to buy. Accordingly, and also pointing to the importance of subjective factors in determining the buying decision, Dittmar et al. (1995) propose and found empirical evidence of a social constructionist model, where a possible explanation for why certain products tend to be bought on impulse more frequently than others, lies on the fact that they are seen as sources of personal and social identity that can help to rectify discrepancies between the actual and ideal self (e.g., a small person buying a big car; man not feeling masculine wearing a motorcycle black leather jacket), projecting the persons' self-image.

A recent but very important step in terms of understanding impulsive buying was done by Wertenbroch (1998), who was able to show that there are goods – "vice goods"- more likely to be bought on impulse than others – "virtue goods", and whose preference varies according with consumers' evaluation of immediate or delayed consumption consequences. Thus, according with the author, X would be considered a vice relative to Y, and Y a virtue relative to X, if and only if, at the margin, $X >_I Y$ (maximizing immediate pleasure) and $Y >_D X$ (maximizing delayed utility). This definition is very important, and a landmark, because it definitely associates impulsive consumption with the consumption of "vices" or hedonic products, that is, products where immediate utility is higher than delayed utility. The influence of this definition has been pervasive, and its relevancy can be seen through the measurement of impulsive buying in terms of hedonic consumption

used in some of the most important studies in the area done recently (Shev & Fedorikin, 2002; Vohs & Faber, 2007).

As we can see, major improvements by previous research were made in terms of understanding the impulsive buying phenomena. Nevertheless, two important concerns (Hoch & Loewenstein, 1991; Loewenstein, 1996) seem to persist. A proper address of these concerns will allow enhancing the quality and the conceptual clearness of the impulsive buying phenomena study. It will also allow a more robust study of the impact of that phenomenon in consumers' life.

The first concern was pointed by Hoch & Loewenstein (1991, p. 504) when referring that the "best way to make progress in understanding impulse buying is to be specific about the behavior in question". That ″specificity″ has not always been clear in the literature, namely the distinction between impulsive and compulsive buying. One of the most accepted definitions of impulsive buying (Rook & Hock, 1985; Rook, 1987; Hoch & Loewenstein, 1991) was done by Rook (1987, p.191) when he defined that "Impulsive buying occurs when a consumer experiences a sudden, often powerful and persistent urge to buy something immediately. The impulse to buy is hedonically complex and may stimulate emotional conflict. Also, impulse buying is prone to occur with diminished regard for its consequences". This definition suggests an emotional and hedonic motivated behavior, and as suggested before, a preference for immediate rather than delayed consequences of consumption (Wertenbrock, 1998). Thus, it also relates impulsive buying with hedonic products.

The second aspect to consider for enhancing the quality of the impulsive buying study is related with the use of measures that capture the tendency to incur in impulsive consumption (Loewenstein, 1996). Most of the studies on impulsive consumption have

used scenarios, surveys and projective methods. According with Loewenstein (1996), the discrepancy between the actual value (implied by the individuals' behavior) and the desired value (viewed by the individual as in his or her self-interest) placed on a particular good or activity increases with the intensity of the action of immediate good-relevant visceral factor (e.g., the cravings associated with drug addiction; drive states such as hunger, thirst and sexual behavior; moods and emotions, and physical pain) originating a gap between behavior and perceived self-interest. At high levels of intensity, the visceral factors cause people to behave contrary to their own long-term self-interest Loewenstein (1996). Nevertheless, when asked in the present, people tend to underestimate the impact of visceral factors on their own future behavior. Thus, when using the type of indicators which have been used to measure impulsive consumption we may be disclosing only the perceived self-interest of individuals and consumers and not the true impulse consumption engagement that would be observed in a realistic situation. Besides that, even the individual's expressed intentions may be biased due to reasons related with social desirability (Fisher, 1993). The individual may be expressing not his real points of view, but the points of view he thinks are more socially valued (Fisher, 1993). For this reason, we consider that the use of indirect behaviorally observable measures of impulsive consumption (e.g., hedonic products' preference) instead of verbal reports whose limitation is well established (Nisbett & Wilson, 1977, Baumeister et al. 2007), allow researchers to avoid these obstacles and contribute to achieve more robust models and results.

In order to address the concerns related with measuring impulsive consumption, we will use indirect behaviorally observable measures of impulsive consumption to test the relation between consumers' self-regulation level and the tendency to engage in impulsive consumption. Simultaneously we will consider how social psychological

measures (negative, neutral, and positive beliefs about personal characteristics of impulsive buyers) can mediate the relation between the consumers' self-regulation level and the consumers' probability of engaging in impulsive consumption behavior.

2.3. CONSUMERS' HETERO-IMPULSIVITY BELIEFS

Our work will focus on beliefs in the sense of what people think about causes and effects (Jervis, 2006), and most specifically about how personal theories about the causes of happiness (Furnham & Cheng, 2000), considered to be personal, idiosyncratic and different across individuals, can affect the way consumers behave in terms of their engagement in impulsive buying behavior. Namely, we will focus on specific beliefs about happiness, related with lay theories about the affect experienced by individuals with different levels of self-regulation.

According to previous research (Bain et al., 2006), beliefs can determine people's reaction to different situations shaping the way we behave; and people tend to act accordingly to the meanings they construct through their day to day social interaction. Cause and effect beliefs have been shown to influence different psychological phenomena, from binge drinking (Lederman et al., 2004) to happiness (Furnham & Cheng, 2000), shaping the way consumers' view the world, and determining different reactions to similar stimulus and situations. Although beliefs are considered to influence our perception and behavior towards reality, they are also considered to be a consequence of reality, being determined by our everyday experience (Ross & Nisbett, 1991).

In terms of explaining consumers' self-control, relevant research has showed that beliefs can influence consumers' goal-directed behavior (Mukhopadhyay & Johar, 2005) and affect regulation (Labroo & Mukhopadhyay, 2009). Accordingly, consumers' lay

theories about self-control in terms of being limited vs. unlimited and malleable vs. fixed resource, have been considered to influence the number of goals consumers set for themselves (Mukhopadhyay & Johar, 2005), where individuals who believed that self-control is a malleable but limited resource setting fewer resolutions than those in the other three conditions. These results were showed to be influenced by participants' beliefs about their own competence (i.e., self-efficacy). Additionally, also affect regulation behavior has been showed to be influenced by consumers' beliefs about emotion transience, determining along with their current feelings, the extent to which they regulate their immediate affect (Labroo & Mukhopadhyay, 2009). Thus, when consumers believed their emotions were fleeting, when feeling happy they engaged in affect regulation, in order to take action to maintain their feelings. When feeling unhappy they did not. When consumers believed their emotions were lasting, when feeling unhappy they engaged in affect regulation, in order to take action for their feelings not to persist. When feeling happy they did not.

Recent studies (Coelho do Vale, 2009) can add evidence that beliefs can determine the way consumers make decisions. Accordingly, the author found that a target-person experience of affect is perceived differently by consumers accordingly to the target-persons description in terms of self-control. Thus, low self-regulators target-persons are perceived/believed to experience higher positive and lower negative affect than high self-regulators target-persons, positively contributing to happiness. The authors also found evidence, that the effect of the degree of self-regulation on happiness was partially mediated by the intensity of the emotions experienced. In a second study built up on the first study (Coelho do Vale, 2009), the results obtained indicated that, again, low self-regulators were believed to experience more positive affect than high self-regulators, with an interaction effect revealing that the participants personality characteristic measured

through the consumer impulsiveness scale may influence the perceptions of the intensity of affect experienced by each of the target-persons described. Also, low self-regulators were believed to have a more positive attitude towards life and lower desire for control, to be higher sensation seekers and to have higher sociability skills. Considerable support was achieved for the claim that there is a general belief that low self-regulators, despite achieving less in life, are happier consumers than high self-regulators due to the sharing of a set of characteristics that make them to experience more happiness. Thus, and according with these results, we created a concept we named "consumers hetero-impulsivity beliefs", which corresponds to consumers' set of beliefs about the personal characteristics of low self-regulators. These beliefs can be positive or negative, according with how much consumers associate positive or negative characteristics to low-self regulators. Interesting enough, and with a considerable practical relevance, is the issue of studying what are the implications of this general beliefs, in terms of explaining the relation between consumers' self-regulation level and the impulsivity consumer behavior itself.

2.4. CONCEPTUAL FRAMEWORK AND HYPOTHESIS

In our study, we propose that consumer's beliefs about self-regulation can offer an alternative explanation for the reason why consumers' engage in patterns of impulsive buying behavior and, following that reasoning, that most claims of irresistible impulses are more a matter of rationalization than of genuinely being helpless against strong desires (Baumeister, 2002).

Tice, Bratslavsky & Baumeister (2001) have showed that short-term affect regulation has priority over other self-regulatory goals, meaning that, for example, eating more snack food when depressed happens only when people believe it will help to cheer them up. By the same token, we also believe that incurring in impulsive buying behavior

will be more strongly influenced by consumers' beliefs about self-regulation when individuals found themselves in states of ego depletion. Consistent with our prediction, several recent studies point to the importance of beliefs in terms of explaining consumers' behavior in a state of ego depletion. Also, Vohs, Baumeister & Ciarocco (2005) found that inter-individual differences in terms of self-disclosure intimacy would be subdued when people where in full possession of their self-regulatory resources but would emerge when those resources were depleted. Zhang & Shrum (2008) results point to the fact that the effects of individuals self-construal in terms of explaining attitudes toward immediate beer drinking (a measure of impulsive consumption) increases with self-regulatory depletion. Vohs & Faber (2007) showed that self-regulatory depletion increases impulsive consumption. These evidences point in the same direction, making us believe that in states of ego depletion, consumers' behaviors will be determined by their beliefs and tendencies.

Thus, we base our line of reasoning in the "free will" model of impulsive buying behavior (Baumeister, et al., 2008), considering that although the individual's state of ego depletion matters, the major determinant of engaging in that pattern of behavior is the way people perceive that behavior and its consequences. Using a metaphor, we are considering that just as several individual extrinsic factors can help to explain why someone commits a crime, the ultimate determinants of its perpetuation are always the author perception of the consequences of the crime.

In order to support our reasoning we predict that ego depletion will act as a moderator of the relation between consumers' hetero impulsivity beliefs and impulsive buying behavior. More specifically, we predict consumers' beliefs and consumers' ego depletion to both positively determine impulsive buying behavior and to interact in a way

that will make consumers' beliefs to more strongly influence impulsive buying behavior in a situation of ego depletion than in one situation of non ego depletion.

Thus, in a situation of high ego depletion, where behavior is more difficult to control, the differences between individuals with high and low hetero impulsivity beliefs will be more pronounced and behavior will be mostly determined by hetero-impulsivity beliefs. In a situation of low ego depletion, differences between individuals with positive and negative hetero impulsivity beliefs will be less pronounced because behavior is more easily controlled by the individual.

This leads us to the hypotheses that:

Hypothesis 1a: When in a situation of ego depletion, participants with positive hetero-impulsivity beliefs will show higher impulsive buying intentions than participants with negative and neutral hetero-impulsivity beliefs.

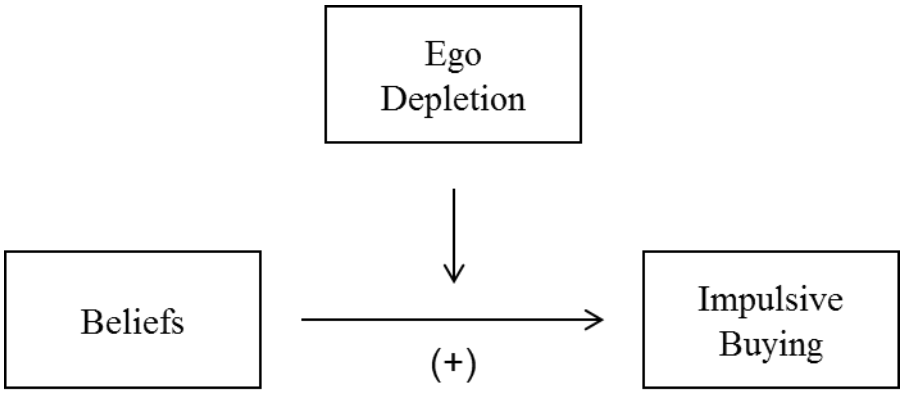
According with Hypothesis 1a, consumers with positive beliefs about people who behave impulsively will show higher levels of impulsive buying intentions when in a situation of ego depletion than consumers with negative or neutral hetero-impulsivity beliefs.

Hypothesis 1b: When in a situation of non-ego depletion, hetero-impulsivity beliefs will not influence consumers' impulsive buying intentions.

According with Hypothesis 1b, although consumers show homogeneous and regular levels of impulsive buying intentions when in full possession of their self-regulatory resources, when depleted of self-regulatory resources, consumers' behavior will tend to diverge according to consumers own beliefs' about impulsive behavior (e.g., hetero-impulsivity beliefs).

Therefore we predict the following conceptual framework:

Figure 1. Impact of Consumers' Hetero-Impulsivity Beliefs on Impulsive Buying as a function of Ego Depletion



According with this conceptual framework, the influence of hetero-impulsivity beliefs on impulsive buying is moderated (Baron & Kenny, 1986) by ego depletion. Thus, we predict that impulsive buying intentions will be influenced by the participants´ hetero-impulsivity beliefs mostly in a situation where participant is ego-depletion. In a non ego-depletion situation, participants' impulsive buying intentions will be more homogenous, not varying according with their hetero-impulsivity beliefs.

3. METHODOLOGY

3.1. Design and Procedure

3.1.1. Type of study

3.1.1.1. Study objectives

The objective of the study was to analyze to what extent consumers' hetero-impulsivity beliefs would act as a moderator of the relation between the ego depletion and impulsive buying behavior. More specifically, we predicted that consumers' hetero-impulsivity beliefs and consumers' ego depletion would both positively determine impulsive buying behavior and would both interact in a way that would make consumers' hetero-impulsivity beliefs to more strongly influence impulsive buying behavior in a situation of ego depletion than in a situation of non ego-depletion.

3.1.1.2. Study description

This was a 2 (ego depletion: low, high) x 3 (hetero-impulsivity beliefs: positive, neutral, negative) between-subjects design. Participants were divided randomly to each of the ego depletion conditions and according with a three percentiles split (33, 66, and 100) procedures for the hetero-impulsivity beliefs condition. The dependent variable measured participants' impulsive consumption intentions. Simultaneously, we also measured three other control variables: affect, self-esteem, and self-regulation. Affect and self-esteem have been showed to influence impulsive buying behavior (Vohs & Faber, 2007, O'Guinn & Faber, 1989), and individuals' self-regulation trait has been showed to interact with ego depletion in terms of explaining impulsive spending (Vohs & Faber, 2007), being therefore relevant to control for these variables.

3.1.1.3. Design and Procedures

Before running the experiments, two pilot studies were implemented in order to build and validate two of the three instruments to be used in the experiment: products portfolio to be evaluated in the second part of the study, and hetero-impulsivity beliefs scale to be filled in the third part of the study.

3.1.1.3.1.1. Pilot Study 1

36 products were chosen to be evaluated by 40 students of the Catholic University of Lisbon in terms of their potential interest to be sold in fictitious new kiosks to be built in the University Campus. 13 products belonged to the Hedonic category (e.g., gum, candy, soda) and 13 to the Utilitarian (e.g., Post-it, Notebook, Paper Index Tabs). The students were selected through a convenience procedure, where they were approached in the photocopies store of the main building, and invited to participate in the study. Using a 7-point scale ranging from *not interesting* to *very interesting*, students were able to evaluate each of the products in terms of its interest to be sold in the kiosks, and also to indicate the convenient selling price of each product. Each product was illustrated by photo and name (in Appendix 1).

After collecting the data, we proceed to the calculation of averages in terms of interest and selling price for each of the 36 products. Among these, we chose the 5 Hedonic and the 5 Utilitarian that were rated highly in terms of interest. The average selling price was also associated to each of the 10 products and used as the indicated potential price of each product in Experiment 1.

3.1.1.3.2. Pilot Study 2

We adapted the scale used by Coelho do Vale (2009) to measure beliefs about hetero-regulation. Thus, we tested 34 items related with personal characteristics of low self-regulated persons (e.g., "In my opinion an impulsive person is a happy person", "In my opinion an impulsive person is an hostile person", "In my opinion an impulsive person achieves a lot in life") using a 7-point scale ranging from *totally disagree* to *totally agree.* We applied a Principal Component Analysis to the 34 items using the Varimax with Kaiser Normalization Rotation Method (Nunnally, 1978). Using the Kaiser criteria we extracted 9 components. According with these 9 components, we were able to delete 2 items which saturated in more than one component (Kline, 1986), reason why they were considered ambiguous (Kline, 1986). The remaining 32 items [in Appendix 2] were tested for reliability using the Cronbach Alpha criteria (Cronbach, 1996) and showed a high internal consistency ($\alpha = 0.893$).

3.1.1.3.3. Experiment 1: Assessing the Moderating Role of Hetero-impulsivity Beliefs on Consumers' Impulsive Behavior

This experiment was run on computer and took about 30 minutes to be completed. 62 students participated in the experiment in exchange for 10€.

After entering the lab, participants were told that the experimental session comprised 3 studies related with consumers' psychology research.

In Study 1, participants were told that the objective of that study was to examine how consumers' regulate attention and with that objective, they would be presented with a test of attention. We borrowed the procedure from Muraven et al. (2006). This test was made through the use of a computer and all instructions were presented in it. Participants in both

conditions (non ego-depleted vs. ego-depleted) were instructed to retype a short paragraph that appeared on the computer screen as quickly as they could. The computer recorded all the keystrokes. The difference between the non ego-depleted and ego-depleted conditions was that in the first condition, participants were told to retype the paragraph as it appeared on the screen, while in the ego-depleted condition, participants were told not to type any e's or spaces as they retyped the paragraph. Accordingly with Rieger (2004) and as empirically validated by Muraven et al. (2006), the task when participants have to override the natural inclination to type every letter, requires self-control, being therefore an appropriate manipulation for ego-depletion.

Before typing the paragraph participants were presented with the PANAS Scales (Watson et al. 1988), to measure affect states and control for eventual interaction effects (Muraven et al. 2006; Vohs & Faber, 2007). Participants were asked to indicate how did they feel regarding 20 emotions (10 positive: enthusiastic, strong, alert and 10 negative: nervous, distressed, guilty), using a 7-point scale ranging from *not at all* to *very much.*

After the manipulation task, participants completed some manipulation checks. After filling in the manipulation checks, participants were thanked and told to initiate the second study.

The second part of the study that was presented as an independent study to participants was also run on computer and participants were told that they would be taking part in a study related with the desirability of some new products to be sold in the Portuguese Universities Campus. We emphasized that the study aimed to know whether students would actually buy these products. The products presented to participants were chosen based on the results obtained in the pilot study.

Next to each computer there was a set of products similar to the ones that were being evaluated. Participants were told that they could touch them the way they wanted in order to do an accurate evaluation of them. For each product, participants were asked to indicate the interest of having the product for sale in the Portuguese Universities Campus, using a 7-point scale ranging from *no interest at all* to *very interesting.* After evaluating the 10 products, participants were evaluated in terms of their Impulsive Consumption Intentions ("How much do you feel tempted to consume any of these products?" 7-point scale; "How much do you desire to consume any of these products?" 7-point scale; "How many products would you consume, if you were able to do it for free?" 7-point scale). The prices indicated for each product were based on the average price assessed in the pilot study, for each product.

After completing this second part, participants were asked to proceed to the following study, which objective was to measure consumers' general beliefs towards impulsive behavior (hetero-impulsivity beliefs). Participants were asked to complete a set of 32 items, indicating to what extend did they agree with each one. These 32 items had been already pre-tested in the pilot-study, and showed high reliability ($\alpha = 0.893$) [in Appendix 2]. After completing this task, participants were told we would also like to assess some personal characteristics about them and were asked to fill in a set of scales (Consumer Impulsiveness Scale, Puri, 1996; Buying Impulse Scale, Rook & Fisher,1995) that acted as control variables. Participants were also asked to complete a measure of self-esteem (Rosenberg, 1965).

3.2. Measures' Description

Manipulation Checks. In order to guarantee that participants in the two conditions felt differences in terms of their self-control efforts, they answered to three questions which allowed us to measure differences in terms of effort, difficulty, and self-control ("How much were you fighting against an urge on that task?" 7-point scale; "How much did you have to

control yourself on that task?" 7-point scale; "Did that task require much effort?" 7-point scale). Differences between the two conditions in terms of effort, difficulty, and self-control allowed us to guarantee that the ego-depletion manipulation was successful.

Affect. To assess affect we used the state version of the Positive and Negative Affect Schedule (PANAS) developed by Watson et al. (1988). This scale is composed by 20 items, 10 positive (e.g., Enthusiastic, Alert, Strong) and 10 negative (e.g., Scared, Distressed, Hostile). Each item was assessed by asking the participants to indicate how they felt regarding a particular emotion using a 7-point scale ranging from *not at all* to *extremely*. Each sub-scale of 10 items originated an average corresponding to positive and negative affect which allowed us to create an Affect Index by subtracting the average of the negative emotions ($\alpha = 0.772$) from the average of the positive emotions ($\alpha = 0.861$) (Yeung & Wyer, 2004), and to control for differences in affect between the ego depletion and the non ego-depletion conditions.

Affect was found to influence impulsive buying (Vohs & Faber, 2007). This influence has been showed to act *via* two different effects: positive affect influencing and preceding impulse purchases (Rook & Gardener, 1993); and impulsive purchase acting as a strategy to cope with negative affect (Elliott, 1994). Thus, it is important to control for affect in our study in order to be sure that differences between the participants in the ego depletion and non ego-depletion conditions in terms of impulsive buying behavior are related with the manipulated variable (ego depletion) and not due to differences in terms of state emotion.

Self-regulation. Self-regulation has been showed to interact with ego depletion in terms of explaining impulsive spending (Vohs & Faber, 2007). Thus, in order to control for the influence of this individual trait, individuals will also be measured in terms of this personality dimension. Individual's level of self-regulation was measured through the CIS -

Consumer Impulsiveness Scale (12 items, e.g., Impulsive, Self-controlled, Extravagant, 7 point scale, Puri, 1996), and the BIS - *Buying Impulse Scale* (9 items, e.g., "I often buy things spontaneously", "I carefully plan most of my purchases", "I often buy things without thinking", 7 point scale, Rook & Fisher, 1995).

Self-esteem. In a similar vein to what has been done in other studies (O'Guinn & Faber, 1989), we assessed self-esteem by using the scale developed by Rosenberg (1965, 10 items, e.g., "I feel I do not have much to be proud of", "All in all, I am inclined to feel that I am a failure", "I take a positive attitude toward myself", 7 point scale). Self-esteem is a variable that has been consistently related with people who exhibit compulsive buying behaviors, with previous literature suggesting that compulsive behaviors are an attempt to temporarily block or overcome feelings of low self-esteem (O'Guinn & Faber, 1989). Accordingly, this is also a very important variable to control in order to assure that between groups differences are due to the two variables manipulates.

All items used were object of careful back translation process (one judge translated from English to Portuguese, and another independent judge did the back translation. Inconsistencies were solved among them). .

Impulsive Consumption Intentions. This measure was directly assessed through the computation of the arithmetic average of three items (e.g., "How much do you feel tempted to consume any of these products?", "How much do you desire to consume any of these products?", "How many products would you consume, if you were able to do it for free?") assessed after the evaluation of products in study 2 and measured on a 7-point scale. The three items showed high reliability ($\alpha = 0.850$).

Hedonic Consumption. It was assessed through the computation of the arithmetic average of the interest for the 5 hedonic products (2 gums, 1 chocolate, 1 candy, and 1 soda) selected through pilot study 1 and measured on a 7-point scale.

Utilitarian Consumption. It was assessed through the computation of the arithmetic average of the interest for the 5 hedonic products (2 notebooks, 1 pencil, 1 stapler, and 1 post-it) selected through pilot study 1 and measured on a 7-point scale.

4. RESULTS ANALYSIS

4.1. Outliers

4.1.1. Detecting Univariate Outliers

In order to detect univariate outliers, we proceeded to the calculation of the *z* scores (Tabachnick & Fidell, 2001) for the 14 variables to be used in our results analysis. The results of that analysis showed no standardized scores in excess of 3.29, with the exception of one case, which showed slightly higher scores than 3.29 in both the hedonic (z=-3,53544) and utilitarian (z=-3,38788) variables *z* scores. Nevertheless, we decided not to delete the case because it showed only slightly differences and only in two variables.

4.1.2. Detecting Multivariate Outliers

In order to detect multivariate outliers, we proceeded to the calculation of the Mahalanobis distance (Tabachnick & Fidell, 2001) for seven different regression models. First, we calculated the Mahalanobis distance for the three databases (study 1 = 5 variables, study 2 = 5 variables, study 3 = 4 variables). Accordingly, no Mahalanobis distance greater than 11.07 (critical value for $\chi 2$ (5), $\alpha = 0.05$) in the two first cases, and 9.49 (critical value for $\chi 2$ (4), $\alpha = 0.05$), in the third case was found. Secondly, we calculated the Mahalanobis distance for the total data, using the 14 variables to be used in our results analysis. Again, no Mahalanobis distance greater than 23.68 (critical value for $\chi 2$ (14), $\alpha = 0.05$), was found. For last, and in order to guarantee that no multivariate outliers were hidden by the fact that 8 out of the 14 variables were aggregated variables, we repeated the first three analysis using the total 25, 15, and 60 variables, not identifying again any outlier.

4.2. Normality Test

After testing for the existence of outliers, we also tested the 14 variables for normal distribution, using the Kolmogorov-Smirnov test. We found normality of variables for 12 of the 14 variables, namely for the manipulation check of difficulty, the positive and negative affect measures, the impulsive consumption intentions, the Hedonic and Utilitarian products interest evaluations, and also for the beliefs, impulsive (BIS and CIS), and self-esteem scales. Thus, we used parametric tests to compare means, whenever we tested one of these 9 variables.

4.3. Reliability Analysis

Before testing the research hypothesis, we executed a reliability analysis of all the scales used. Thus, we calculated the Cronbach Alpha for all the scales (Table 3).

Table 1. Cronbach's Alpha for the seven scales used in study 1

Scale	Number of Items	Alpha
PANAS Positive Affect	10	0.861
PANAS Negative Affect	10	0.772
Impulsive Consumption Intentions	3	0.850
Self-regulation Beliefs	32	0.893
Buying Impulse Scale	9	0.867
Consumer Impulsiveness Scale	11	0.755
Self-Esteem	10	0.887

As it can be seen from Table 1, we obtained high Cronbach's Alpha values for most of the scales without having to delete any item. The only exception was the CIS scale, where we decided to delete the Portuguese translation of the original item – planner – which could

have been ambiguously understood by the participants[1], increasing the overall Cronbach's Alpha of the scale from 0.614 to 0.755.

In order to create the three groups about hetero-impulsivity beliefs (negative beliefs, neutral beliefs, positive beliefs), we split the scale in 3 sub group, according to the 33, 66, and 100 percentiles values. Participants in the lower 33 percentile were coded as having negative beliefs, the ones between 33 and 66 percentile were coded as having neutral beliefs, and the ones in the upper 33 percentile as having positive beliefs towards impulsive behavior.

4.4. Hypothesis Testing

4.4.1. Ego depletion Manipulation

In order to test for the efficacy of our manipulations we compared across conditions (non-ego vs. ego depletion) for mean differences in terms of our three manipulation checks (effort, difficulty, and self-control).

Results indicated significant differences across groups that validated the manipulation used. Compared with the participants in the non-ego condition, participants in the ego depletion condition showed higher levels of effort (MR_{nonego}=25.19, MR_{ego}=38.23, Z(60)=-2.93, p<0.01), more difficulty in performing the task (M_{nonego}=2.59, M_{ego}=4.67, t(60)=-5.67, p<0.000), and higher self-control needed to perform the task (MR_{nonego}=23.92, MR_{ego}=39.58, Z(60)=-3.471, p=0.01).

In order to control for alternative explanations related with different emotional states, we also measured affect before participant completed the attention task (study 2). Findings indicated no differences between the conditions in terms of positive affect (M_{nonego}=4.78,

[1]We think this was due to the lack of a direct translation from the English to the Portuguese language, which created a lack of correspondence between the two terms

M_{ego}=4.84, t(60)=-0.26, n.s.) and negative affect (M_{nonego}=1.76, M_{ego}=2.08, t(60)=-1.87, n.s.). These results allow us to rule out the possibility that any differences found across groups could be due to different emotions experienced.

4.4.2. Dependent Variable

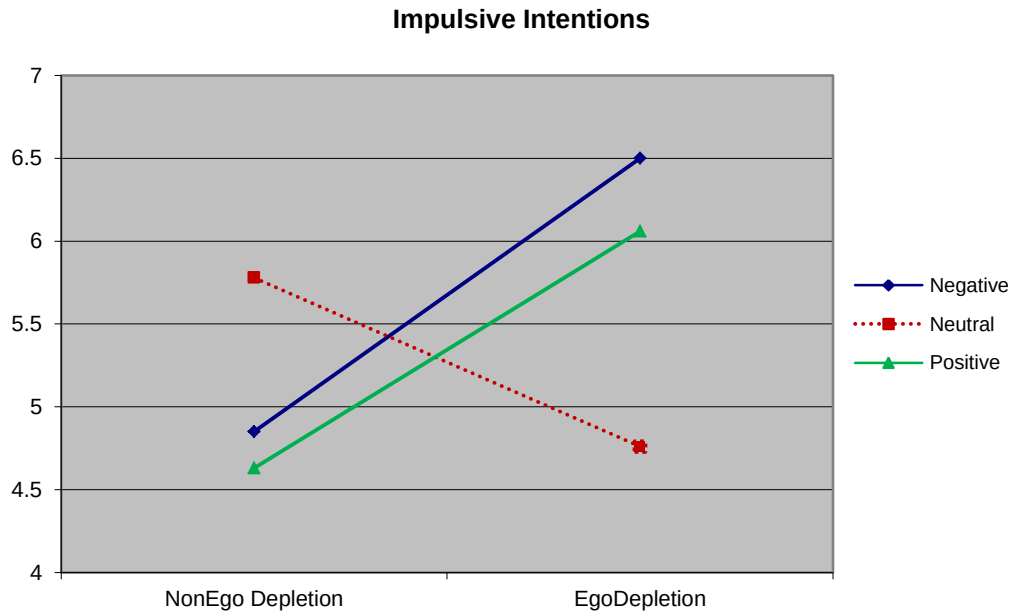
In order to test for our mediating hypothesis we executed a multivariate GLS model, using the *ego depletion* conditions and the *hetero-impulsivity beliefs* conditions as our fixed factors and all the other scales as our dependent variables (results are presented in Table 4).

Table 2. GLS Model with Ego Depletion Manipulation and the Self-regulation Beliefs as Fixed Factors

	Non Ego Depleted			Ego Depleted			F-tests		
	Negative Beliefs (n=16)	Neutral Beliefs (n=6)	Positive Beliefs (n=10)	Negative Beliefs (n=4)	Neutral Beliefs (n=15)	Positive Beliefs (n=11)	Ego Depletion m.e.	Beliefs m.e.	Interaction
Dependent Variables									
Impulsive Intentions	4,85[a,d]	5,78[a]	4,63[a,d]	6,50[a,b]	4,76[c,d]	6,06[b]	2,867	0,338	**4,600***
Hedonics	4,14[a,b]	5,37[c]	4,68[b]	6,05[c]	5,09[c,d]	5,11[b,d]	**5,832***	0,544	**4,479***
Control Variables									
Utilitarian	4,90	4,73	5,80	5,65	5,47	5,71	2,924	2,426	1,183
Manipulation Checks	3,27[a]	3,94[a]	3,57[a]	5,50[b]	4,77[a,b]	5,15[b]	**21,46****	0,002	1,334
Affect Index	2,52	3,32	3,64	3,32	2,60	2,77	0,800	0,422	3,035
Self-esteem	5,54	6,15	5,57	5,82	5,60	5,38	0,326	0,868	0,728
CIS	3,08	3,26	3,47	3,48	3,41	3,55	1,477	,352	0,321
BIS	2,56	3,43	3,37	3,28	2,84	3,15	0,007	0,745	1,587

*p<0.05 **p<0.01 means that do not share subscripts differ at p < .05 (for the dependent variables)

Figure 2. Impulsive Buying Intentions for the Non Ego Depletion and the Ego Depletion Conditions in each Self-regulation Beliefs Categories



In terms of the Impulsive Buying Intentions variable, a significant interaction effect ($F=4.60$, $p<0.05$) was found between *ego depletion* conditions and the *hetero-impulsivity beliefs,* indicating that, as expected, consumers' impulsive behaviors are affected by these two variables.

In order to test our Hypothesis 1a, where we stated that consumers' with positive hetero-impulsivity beliefs would show a higher willingness to engage in impulsive buying behaviors than negative and neutral hetero-impulsivity beliefs in situations of lack of self-regulatory resources, we analyzed impulsive buying intentions expressed by participants across the two ego depletion conditions. In the ego depletion condition, impulsive tendencies differed between participants that shared different beliefs ($M_{negative}=6.50$, $M_{neutral}=4.76$, $M_{positive}=6.06$, $F_{(2,28)}=8.48$, $p=0.001$), nevertheless, participants with negative hetero-impulsivity beliefs where the ones showing higher levels of impulsive tendencies, followed by participants with positive and neutral hetero-impulsivity beliefs. This result was opposite

to what we expected. Our prediction that participants with positive hetero-impulsivity beliefs would show higher impulsive tendencies than participants with neutral and negative hetero-impulsivity beliefs, was thus not empirically supported.

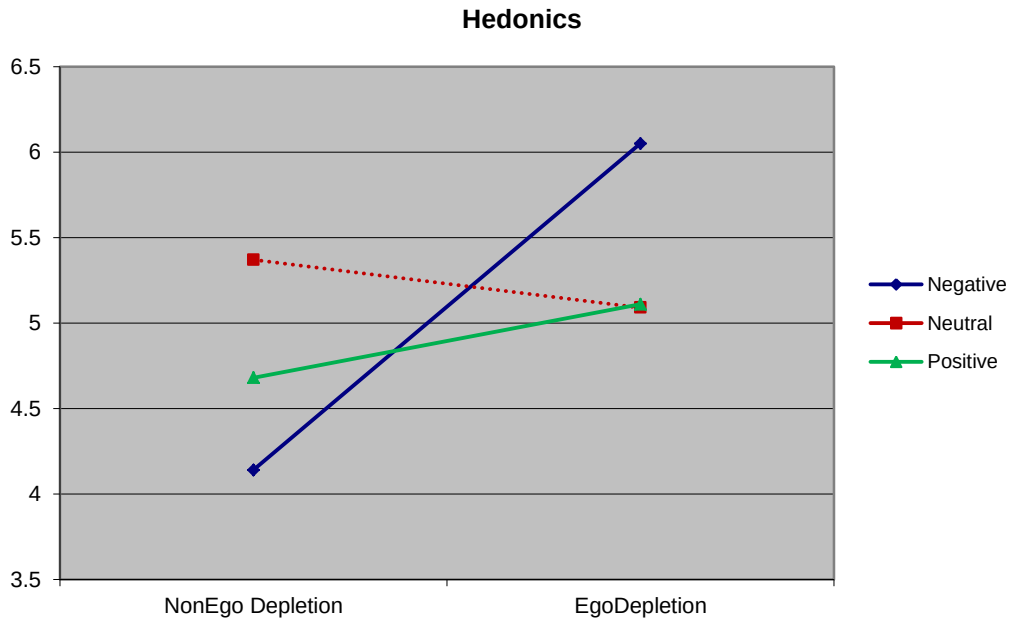
In order to test Hypothesis 1b, where we stated that consumers' with positive hetero-impulsivity beliefs would not show a higher willingness to engage in impulsive buying behaviors than negative and neutral hetero-impulsivity beliefs in situations of non-ego depletion, results indicate that participants with different sets of beliefs did not differ among themselves ($M_{negative}$=4.85, $M_{neutral}$=5.78, $M_{positive}$=4.63, $F_{(2,29)}$=0.88, n.s.). This result was according with our prediction and gives support to Hypothesis 1b.

Additional results on the ego depletion condition showed that impulsive intentions were similar both for participants with negative beliefs and with positive beliefs ($M_{negative}$=6.50, $M_{positive}$=6.06, $t_{(2,13)}$=1.08, n.s.), indicating that both participants with negative and positive hetero-impulsivity beliefs express equivalent impulsive buying intentions in an ego depletion condition. This means that although with different intensities, both groups seem to use impulsivity to cope with a lack of self-regulatory resources. Interestingly, participants that showed lower impulsivity intentions were the ones with neutral hetero-impulsivity beliefs. This may indicate that they are neutral regarding impulsivity behavior because à priori they are able to cope with depletion using a different set of mechanisms not related with impulsivity.

Compared with participants in the non ego-depletion condition, participants in the ego depletion task who shared positive hetero-impulsivity beliefs showed significant higher intentions to behave on impulse (M_{nonego}=4.63, MR_{ego}=6.06, $t_{(1,19)}$=-2.48, $p<0.05$). The opposite effect was found for neutral consumers that showed marginal significant lower intentions to behave on impulse (M_{nonego}=5.78, M_{ego}=4.76, $t_{(1,19)}$=2.04, $p<0.06$). No

significant differences were found for participants who shared negative beliefs (M_{nonego}=4.85, M_{ego}=6.50, $t_{(2,18)}$=-1.64, n.s.).

Figure 3. Hedonic Products Interest for the Non Ego Depletion and the Ego Depletion Conditions in each Self-regulation Beliefs Categories



In order to gain a more detailed comprehension of the impulsive buying phenomena, we tested the Hedonics Product Interest variable as dependent variable. We decided to do it because Hedonic products are the ones more closely associated with the impulsive buying phenomena (Wertenbroch, 1998; Shiv & Fedorikin, 2002; Vohs & Faber, 2007) and we consider that the participants desire to have Hedonic products for sale in the university would allow us to capture desire visceral factors intensity (Lowenstein, 1996) and avoid social desirability bias (Fisher, 1993), allowing a good measurement of the participants impulsive buying intentions. Thus, in term of the Hedonics variable, a significant interaction effect ($F=4.48$, $p<0.05$) between *ego depletion* conditions and the *hetero-impulsivity beliefs* was also found, indicating that, as expected, consumers' impulsive behaviors are affected by these

two variables. This result reinforces the robustness of our prediction, once it represents the finding of the same evidence, using an alternative and proxy measure of the first dependent variable used (impulsive intentions).

In order to re test Hypothesis 1a and 1b, using a measure of another nature, we analyzed the interest in Hedonic products expressed by participants across the hetero-impulsivity beliefs groups. Results indicate the existence of significant differences between the neutral and the positive hetero-impulsivity beliefs condition ($M_{neutral}$=5.37, $M_{positive}$=4.68, $t_{(1,19)}$=2.66, p=0.019) and the neutral and the negative hetero-impulsivity beliefs condition ($M_{neutral}$=5.37, $M_{negative}$=4.14, $t_{(1,20)}$=-2.07, p=0.06) on the non ego-depletion condition. On the ego-depletion condition, results only showed significant differences between the negative and the positive hetero-impulsivity beliefs condition ($M_{negative}$=6.05, $M_{positive}$=5.11, $t_{(2,20)}$=2.75, p=0.016). These results indicate that individuals with neutral and positive hetero-impulsivity beliefs converge to the same levels of impulsive buying intentions. Individuals with negative hetero-impulsivity beliefs tend to show the opposite behavior, diverging from both individuals with neutral and positive hetero-impulsivity beliefs when in a condition of ego-depletion. Thus, and replicating the results obtained with our first dependent variable measure, we found empirical support for Hypothesis 1b but not for Hypothesis 1a.

Important to note, that differences between the non ego-depletion condition and the ego-depletion condition are significant when we compare the participants with negative hetero-impulsivity beliefs (M_{nonego}=4.14, M_{ego}=6.05, $t_{(2,18)}$=-2.68, p=0.015), but they are not significant when we compare the positive (M_{nonego}=4.68, M_{ego}=5.11, $t_{(2,19)}$=-1.84, p=0.08) and neutral hetero-impulsivity beliefs participants (M_{nonego}=5.37, M_{ego}=5.09, $t_{(2,19)}$=0.54, n.s.). Thus, it seems that participant with negative hetero-impulsivity beliefs are the ones to be

more prone to use a strategy of willingness to engage in impulsive buying behaviors to cope with a situation of ego depletion.

For the Utilitarian Products Interest variable, a measure included because we consider it not to be a proxy of impulsive buying intentions, choices indicate no differences across conditions (all Fs<3.0). This result, jointly with the fact that no differences were found between other control variables included (affect, self-esteem, and self-regulation) gives us a considerable amount of support to the hypothesis that the differences found across conditions in terms of the two dependent variables used, are due to the two independent variables used - *ego depletion* and *hetero-impulsivity beliefs,* and not due to other alternative explanation commonly referred in the literature (Vohs & Faber, 2007, O'Guinn & Faber, 1989, Marlatt et al. 1988).

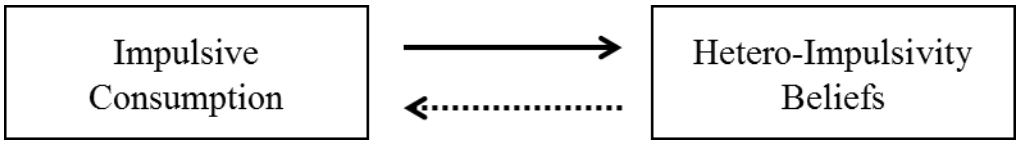
5. MAIN CONCLUSIONS AND FUTURE DIRECTIONS

In summary, the results found with this first study can be considered striking and counter-intuitive when faced with the previous literature (Baumeister et al. 1994, Baumeister, 2002, Coelho do Vale, 2009) and our own research hypothesis. Accordingly, instead of participants with positive hetero-impulsivity beliefs, we found that participants with negative hetero-impulsivity beliefs were the ones showing the highest impulsive consumption intentions when in an ego depletion situation. These surprising results can only be explained if we raise the hypothesis that participants with negative hetero-impulsivity beliefs – who think that people who behave on impulse share undesirable characteristics – will use impulsive consumption as a coping strategy to deal with a situation of ego depletion, more often than participants with positive and neutral hetero-impulsivity beliefs. The hypothesis that participants with negative hetero-impulsivity beliefs use impulsive consumption as a coping strategy (Carver et. al, 1989) more often than the positive and neutral ones is not only intuitively appealing but would also allow us to align our results with our literature review, namely with the claim (Ross & Nisbett, 1991) that beliefs not only influence our perception and behavior towards reality, but are also a consequence of reality, being determined by our everyday experience. Thus, explaining our results in one sentence, we claim that people develop beliefs about behaving on impulse according with the way they behave when confronted with situations of ego depletion, and not the other way around.

Nevertheless, if we use this explanation, one finding remains elusive: participants with neutral hetero-impulsivity beliefs were the ones showing the lowest impulsive consumption intentions when in an ego depletion situation. More specifically, neutral showed lower impulsive consumption intentions than positive. Although this can look like a paradox, it can be easily explained if we adopt a biunivocal relationship between beliefs and behavior: not

only consumers being easily tempted originates negative beliefs about people that buy on impulse, but also positive beliefs about people that buy on impulse facilitate consumers being easily tempted. The first relation explains why participants with negative hetero-impulsivity beliefs were the ones showing the highest impulsive consumption intentions and the second relation explains why participants with positive hetero-impulsivity beliefs showed highest impulsive consumption intentions than participants with neutral hetero-impulsivity beliefs. The fact that the second relation (beliefs influencing impulse consumption) is weaker than the first (impulse consumption influencing beliefs), allows us to conceptualize the relation between hetero-impulsivity beliefs and impulsive consumption as a biunivocal relation where the influence of behavior on beliefs is stronger than the influence of beliefs on behavior (Figure 2).

Figure 4. Hypothetical Biunivocal Relation between Consumers' Hetero-Impulsivity Beliefs and Impulsive Consumption



In order to prove this relation and simultaneously align it with the findings of Vohs & Faber (2007), also replicated in our study, which show that consumers' buy more on impulse when they lack self-regulatory resources, we think it would be interesting to add to future studies of this relation, a third variable to the equation, which would work as a process measure: self-control strength. Measuring this variable, would allow us to understand if participants show higher impulsive consumption intentions are originated because they lack self-regulatory resources or by any other reason (e.g., motivation). If the reason is lack self-regulatory resources, we would expect higher levels of vulnerability (Muraven et al., 1999) to an ego depletion task from the negative hetero-impulsivity beliefs participants and non-

significant differences between the positive and the neutral. After all, their differences in terms of impulsive consumption would be explained mainly by their hetero-impulsivity beliefs.

In terms of future research, another opportunity to add robustness to the findings would be to test the relations we studied using different measures of the dependent variable: impulsive buying. In fact, in our study we only used a measure of impulsive buying intentions towards a group of hedonic and utilitarian products we found to be interesting to our sampled population in a previous pilot test. We didn't used behavioral measures of impulsive buying as the ones used in other important, were participants had to choose between one hedonic and one utilitarian product (Shev & Fedorikin, 2002), or even allowed to buy hedonic and utilitarian products (Vohs & Faber, 2007). Although we trust our measures to in terms of capturing impulsive buying intentions, it would be important to prove that would find the same results with pure behavioral measures. Also important would be to test these relations with different types of samples. We used a sample composed by economics/management university students and it would be interesting to understand if the impact of hetero-impulsivity beliefs on impulsive buying behavior can change according with the participants' age, occupation, or other socio-economic measures. These would be interesting avenues for future research.

Just like the Copernican Revolution shift the paradigm away from the Ptolemaic model of the heavens, which postulated the Earth at the center of the universe, towards the heliocentric model, with the Sun at the center of our Solar System, we also propose a consumers' hetero-impulsivity beliefs revolution, by postulating behavior, instead of beliefs, as the center of the impulsive consumption phenomena. Although it won't add much to the explanation of the Solar System structure, hopefully, it will contribute something to the explanation of self-regulation, an important process for consumers' all around planet Earth.

6. PROPOSAL FOR A FOLLOW-UP STUDY

In order give robustness to the hypothesis raised by Study 1, we decided to propose a Study 2, adding impulsive consumption variables of a different nature, and including process measures we considered to be possible to mediate the relation between impulsive consumption and hetero-impulsivity beliefs. According, we want to find evidence of the hypothesis that consumers with negative beliefs about people who behave impulsively will have higher levels of vulnerability to an ego depletion (Muraven et al., 1999) task, and because of that will show lower levels of self-regulation power and higher levels of impulsive consumption behavior when in a situation of ego depletion.

Thus, in order to test this self-regulation power mediation hypothesis, we propose the following hypothesis:

Hypothesis 2: When in a situation of ego depletion, participants with lower levels of self-regulation power will show higher impulsive buying intentions levels than participants with higher levels of self-regulation power.

Hypothesis 3a: When in a situation of ego depletion, participants with lower levels of self-regulation power will be the ones showing higher negative hetero-impulsivity beliefs.

Hypothesis 3b: When in a situation of ego depletion, participants with higher levels of self-regulation power will be the ones showing higher positive hetero-impulsivity beliefs.

Hypothesis 4: When in a situation of non-ego depletion, participants with different levels of self-regulation power will show equivalent levels of impulsive buying intentions.

Study 2 – Relating Hetero-impulsivity Beliefs to Self-regulation Stamina.

2. METHODOLOGY

2.1. Design and Procedure

2.1.1. Type of study

2.1.1.1. Study objectives

The objective of the study is to analyse to what extent consumer's hetero-impulsivity beliefs, which were shown to be related with the amount of consumers' impulsive buying intentions when in a situation of ego depletion, relate with consumers' self-regulation power, i.e., vulnerability to self-control fatigue (Muraven et al., 1999). More specifically, we predict that high impulsive buying behaviour in a situation of ego depletion will originate negative consumers' hetero-impulsivity beliefs and not the other way around. This relation will be explained by the self-regulation power process measure. Thus, we predict that consumers' with low self-regulation power will behave more on impulse in a situation of ego depletion, having more difficulties to control, and this behavior will led them to build negative general beliefs about people who behave on impulse, based on their own experiences (Ross & Nisbett, 1991).

2.1.1.2. Study description

In a similar vein to what was done in study 1, this will be a 3 (hetero-impulsivity beliefs: negative, neutral, positive) x 2 (self-control: depleted, non-depleted) between-subjects design. Participants will be divided randomly to each of the ego depletion conditions and according with a three percentiles split (33, 66, and 100) procedure for the hetero-impulsivity beliefs condition. The dependent variables will measure participants' impulsive

consumption intentions and behavior. Besides the impulsive consumption intentions variables used in study 1: Impulsive Intentions and Hedonics, we will use a behavioural decision measure – the choice between a candy and a more healthy product (Shiv & Fedorikhin, 1999; Labroo & Mukhopadhyay, 2009). We will also assesse another measure – self-regulation power (Muraven et al., 1999), which we believe will help us to explain the relation between hetero-impulsivity beliefs and impulsive consumption intentions and behaviour, and a control variable – self-esteem, which has been showed to influence impulsive buying behavior (O'Guinn & Faber, 1989). Additionally, we will measure participants' socio-economic level, a variable that has been related with self-regulation in an inconclusive way (Mischel, 1967, Ainslie, 1975, Levy, 1976, Solnick et al., 1980).

We will use subtle measures of self-regulatory effectiveness in the academic domain, which were shown to be reliable indexes of self-control effectiveness (Fishbach et al., 2003; Fishbach & Shah, 2006), namely we will ask participants to rate the extent to which a) it was difficult for them to get good grades in their classes and b) it was difficult for them to complete their coursework (both measures are reverse coded). We will measure participants GPA, a measure used as a proxy to participants' chronic self-regulatory effectiveness in a previous study (Fishbach & Shah, 2006).

2.1.1.3. Design and Procedures

2.1.1.3.1. Experiment 2: Relating Hetero-impulsivity Beliefs to Self-regulation Stamina

This experiment was run on computer and took about 50 minutes to be completed. xx students participated in the experiment in exchange for shopping gift of 7,5 Euros.

After entering the lab, participants were told that the experimental session comprised 3 studies related with consumers' psychology research.

In study 1, the objective was to measure consumers' general beliefs towards impulsive behaviour (hetero-impulsivity beliefs). First participants were told we would also like to assess some personal characteristics about them and were asked to fill in a measure of self-esteem (Rosenberg, 1965) that acted as control variable. After that, participants will be asked to complete a set of 32 items, indicating to what extend did they agree with each one. These 32 items had been already pre-tested in the pilot-study, and showed high reliability ($\alpha = 0.893$). After completing this task, participants will be asked to complete a set of 38 items about the causes of happiness (Furnham & Cheng, 2000) which will act as a filler task.

In Study 2, participants will be told that the objective of the study is to examine how consumers' regulate attention and with that objective, they will be presented with a test of attention. We borrowed the procedure from Muraven et al. (2006). This test will be made through the use of a computer and all instructions will be presented in it. Participants in both conditions (non ego-depleted vs. ego-depleted) will be instructed to retype a short paragraph that appears on the computer screen as quickly as they can. The computer will record all the keystrokes. The difference between the non ego-depleted and ego-depleted conditions is that in the first condition, participants are told to retype the paragraph as it appears on the screen, while in the ego-depleted condition, participants are told not to type any e's or spaces as they retype the paragraph. Accordingly with Rieger (2004) and as empirically validated by Muraven et al. (2006), while doing that task, participants have to override the natural inclination to type every letter and that requires self-control, being therefore an appropriate manipulation for ego-depletion.

Before typing the paragraph participants are presented with the PANAS Scales (Watson et al. 1988), to measure affect states and control for eventual interaction effects (Muraven et al. 2006; Vohs & Faber, 2007). Participants are asked to indicate how did they feel regarding 20 emotions (10 positive: enthusiastic, strong, alert and 10 negative: nervous, distressed, guilty), using a 7-point scale ranging from *not at all* to *very much.*

After the manipulation task, participants rated how much time it took to complete the task using a 7-point scale ranging from *very little* to *very much.* This measure has been used previously as a proxy of self-regulation capacity (…). After that, participants completed some manipulation checks. After filling in the manipulation checks, participants were thanked and told to initiate the second study.

After completing study 2, participants are asked to wait alone in a separate room and told they could choose a snack between an apple (healthy) and a chocolate (unhealthy but tasty) before they move to the room where they will start study 3. This measure was pretested and used before ((Labroo & Mukhopadhyay, 2009) and it was showed that, regardless of gender, chocolate was considered to be more immediately affective than apples, but apples are viewed as providing long-term health benefits. Thus, we thought it will be a good measure to capture participants' impulsive consumption behavior.

Study 3 is also run on computer and participants will be told that they will be taking part in a study related with the desirability of some new products to be sold in the Portuguese Universities Campus. We will emphasize that the study aims to know whether students will actually buy these products. The products presented to participants were chosen based on the results obtained in the pilot study.

Next to each computer there will be a set of products similar to the ones that will be evaluated. Participants are told that they can touch them the way they wante in order to do

an accurate evaluation of them. For each product, participants will be asked to indicate the interest of having the product for sale in the Portuguese Universities Campus, using a 7-point scale ranging from *no interest at all* to *very interesting.* After evaluating the 10 products, participants will evaluate themselves in terms of their Impulsive Consumption Intentions ("How much do you feel tempted to consume any of these products?" 7-point scale; "How much do you desire to consume any of these products?" 7-point scale; "How many products would you consume, if you were able to do it for free?" 7-point scale). Additionally, participants' will be asked to indicate how much they were willing to pay for each of the products, a measure which was previously used as an indicator of impulsive consumption behavior (Vohs & Faber, 2007).

2.2. Measures' Description

Manipulation Checks. In order to guarantee that participants in the two conditions felt differences in terms of their self-control efforts, they will answer to three questions which will allow us to measure differences in terms of effort, difficulty, and self-control ("How much were you fighting against an urge on that task?" 7-point scale; "How much did you have to control yourself on that task?" 7-point scale; "Did that task require much effort?" 7-point scale). Differences between the two conditions in terms of effort, difficulty, and self-control will allow us to guarantee that the ego-depletion manipulation was successful.

Affect. To assess affect we used the state version of the Positive and Negative Affect Schedule (PANAS) developed by Watson et al. (1988). This scale is composed by 20 items, 10 positive (e.g., Enthusiastic, Alert, Strong) and 10 negative (e.g., Scared, Distressed, Hostile). Each item will be assessed by asking the participants to indicate how they felt regarding a particular emotion using a 7-point scale ranging from *not at all* to *extremely*. Each sub-scale of 10 items will originate an average corresponding to positive and negative

affect which wil allow us to create an Affect Index by subtracting the average of the negative emotions (α = 0.xxx) from the average of the positive emotions (α = 0.xxx) (Yeung & Wyer, 2004), and to control for differences in affect between the ego depletion and the non ego depletion conditions.

Self-esteem. In a similar vein to what has been done in other studies (O'Guinn & Faber, 1989), we will assess self-esteem by using the scale developed by Rosenberg (1965, 10 items, e.g., "I feel I do not have much to be proud of", "All in all, I am inclined to feel that I am a failure", "I take a positive attitude toward myself", 7 point scale)..

Impulsive Consumption Intentions. This measure will be directly assessed through the computation of the arithmetic average of three items (e.g., "How much do you feel tempted to consume any of these products?", "How much do you desire to consume any of these products?", "How many products would you consume, if you were able to do it for free?") assessed after the evaluation of products in study 2 and measured on a 7-point scale.

7. REFERENCES

Bain, P., Yoshihisa, K. & Nick, H. (2006). "Conceptual Beliefs About Human Values and Their Implications: Human Nature Beliefs Predict Value Importance, Value Trade-Offs, and Responses to Value-Laden Rhetoric". *Journal of Personality and Social Psychology*, 91(August), 351-367.

Baron, R.M. & Kenny, D.A. (1986). "The Moderator-Mediator variable distinction in Social Psychological research: Conceptual, strategic, and statistical Considerations". *Journal of Personality and Social Psychology*, 51, 1173-1182.

Baumeister, R., Heatherton, T. & Tice, D. (1994). Losing Control: How and Why People Fail at Self-Regulation. San Diego: Academic Press.

Baumeister, R., Bratslavsky, E., Muraven, M. & Tice, D. (1998). "Ego Depletion: Is the Active Self a Limited Resource?" *Journal of Personality and Social Psychology*,74(5), 1252-1265.

Baumeister, R. (2002). "Yielding to Temptation: Self-Control Failure, Impulsive Purchasing, and Consumer Behavior," *Journal of Consumer Research,* 28(March), 670-676.

Baumeister, R. F., Vohs, K. D. & Funder D. C. (2007). "Psychology as the Science of Self-Reports and Finger Movements: Whatever Happened to Actual Behavior?" *Perspectives on Psychological Science*, 2, 396-403.

Baumeister, R., Sparks, E., Stillman, T. & Vohs, K. (2008). "Free will in consumer behavior: Self-control, ego depletion, and choice". *Journal of Consumer*

Psychology, 18, 4-13.

Beatty, S. E., & Ferrel, M. E. (1998). "Impulse Buying: Modeling Its Percursors", *Journal of Retailing*, 74(2), 169-191.

Bellenger, D., Robertson, D. & Hirschman, E. (1978). "Impulse Buying Varies by Product", *Journal of Advertising Research*, 18(6), 15-18.

Carver, C., Weintraub, J. & Scheier, M. (1989). "Assessing Coping Strategies: A Theoretically Based Approach". *Journal of Personality and Social Psychology*, 56(2), 267-283.

Coelho do Vale, R. (2009). "Merry Impulsivity: Belief Systems about the Dark and Bright Sides of Being Bad Consumers", *Advances in Consumer Research*, vol.37.

Cronbach, J. (1996). Fundamentos da testagem psicológica (5ª ed.). Porto Alegre: Artes Médicas.

Dittmar, H., Beattie, J. & Friese, S. (1996). "Objects, decision considerations and self-image in men's and women's impulse purchases". *Acta Psychologica*, 93, 187-206.

Elliot, R. (1994). "Addictive Consumption: Function and Fragmentation in Postmodernity". *Journal of Consumer Psychology*, 17, 159-179.

Fishbach, A. & Shah, J. (2006). "Self-Control in Action: Implicit Dispositions toward Goals and Away from Temptations". *Journal of Personality and Social Psychology*, 90(May), 820-832.

Fisher, R. J. (1993). "Social Desirability Bias and the Validity of Indirect Questioning". *Journal of Consumer Research*, 20(September), 303-315.

Furnham, A. & Cheng, H. (2000). "Lay Theories of Happiness". *Journal of Happiness Studies*, 1, 227-246.

Hirschman, E. & Holbrook, M. (1982). "Hedonic Consumption: Emerging Concepts, Methods and Propositions", *Journal of Marketing*, 46, 92-101.

Holbrook, M. & Hirschman, E. (1982). "The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun", *Journal of Consumer Research*, 9(September), 132-140.

Hoch, S. & Loewenstein, G. (1991), "Time-inconsistent Preferences and Consumer Self-Control". *Journal of Consumer Research*, 17, 492-507.

Jervis, R. (2006). "Understanding Beliefs". *Political Psychology*, 27(October), 641-663.

Jones, M. A., Reynolds, K. E., Weun, S. & Beatty, S. E. (2003). "The product-specific nature of impulse buying tendency". *Journal of Business Research*, 56, 505-511.

Kline, P. (1986). A handbook of test construction: Introduction to psychometric design. London: Methuen & Co. Ltd.

Kwak, H., Zinkhan, G. M., DeLorme, D. E. & Larsen, T. (2006). "Revisiting Normative Influences on Impulse Buying Behavior and an Extension to Compulsive Buying Behavior: A Case from South Korea". *Journal of International Consumer Marketing*, 18(3), 57-80.

Lederman, L., Joshua L., & Robert, K. (2004). "Believing is Seeing". *The American*

Behavioral Scientist, 48(September), 130-136.

Levy, S. (2004). "Symbols for Sale". *Harvard Business Review*, 37(July-August), 117-119.

Labroo, A. & Mukhopadhyay, A. (2009). "Lay Theories of Emotion Transience and the Search for Happiness: A Fresh Perspective on Affect Regulation". *Journal of Consumer Research*, 36(August), 242-254.

Loewenstein, G. (1996). "Out of Control: Visceral Influences on Behavior" *Organizational Behavior and Human Decision Processes,* 65(3), 272-292.

Mischel, W. (1966). "Theory and research on the antecedents of self-imposed delay of Reward". In B. A. Maher (Ed.) *Progress in experimental personality research*, 3, 85-132. New York: Academic Press.

Mischel, W. (1974). "Processes in the delay of gratification". In L. Berkowitz (Ed.). *Advances in Experimental Social Psychology*, 7, 249-292. New York: Academic Press.

Mukhopadhyay, A. & Johar, G. (2005). "Where There Is a Will, is There a Way? Effects of Lay Theories of Self-Control on Setting and Keeping Resolutions". *Journal of Consumer Research*, 31(March), 779-786.

Muraven, M., Baumeister, R. & Tice, D. (1999). "Longitudinal Improvement of Self-Regulation through Practice: Building Self-Control through Repeated Exercise" *Journal of Social Psychology,* 139(August), 446-457.

Muraven, M. & Baumeister, R. (2000). "Self-Regulation and Depletion of Limited

Resources: Does Self-Control Resemble a Muscle?" *Psychological Bulletin*, 126(2), 247-259.

Muraven, M. & Slessareva, E. (2003). "Mechanisms of Self-Control Failure: Motivation and Limited Resources" *Personality and Social Psychology Bulletin*, 29, 524-537.

Muraven, M., Shmueli, D. & Burkley, E. (2006). "Conserving Self-Control Strength" *Journal of Personality and Social Psychology*, 91(3), 524-537.

Nisbett, R. E. & Wilson, D. D. (1977). "Telling More Than we Can Know: Verbal Reports on Mental Processes" *Psychological Review*, 84, 231-59.

Nunnally, J.C. (1978). Psychometric theory. New York: McGraw-Hill.

O'Guinn, T.C. & Faber, R. J. (1989). "Compulsive Buying: A Phenomenological Exploration". *Journal of Consumer Research*, 16, 147-157.

O'Guinn, T.C. & Faber, R. J. (1992). "A Clinical Screener for Compulsive Buying". *Journal of Consumer Research*, 19(December), 459-469.

Puri, R. (1996). "Measuring and Modifying Consumer Impulsiveness: A Cost-Benefit Accessibility Framework". *Journal of Consumer Psychology*, 5(2), 87-113.

Rieger, M. (2004). "Automatic Keypress Activation in Skilled Typing". *Journal of Experimental Psychology*, 30(3), 555-565.

Rook, D. W. (1987). "The Buying Impulse". *Journal of Consumer Research*, 14 (September), 189-199.

Rook, D. W. & Fisher, R. J. (1995). "Normative Influences on Impulsive Buying Behavior". *Journal of Consumer Research*, 22(December), 305-313.

Rook, D. W. & Gardner, M. (1993). "In the mood: Impulse buying's affective antecedents". *Research in consumer research,* 6, 1-28.

Rook, D. W. & Hock. S. J. (1985). "Consuming Impulses". *Advances in Consumer Research*, Vol. 12, ed. Elisabeth C. Hirschman and Morris B. Holbrook, Provo, UT: Association for Consumer Research, 23-27.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

Shiv, B. & Fedorikhin, A. (1999). "Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making". *Journal of Consumer Research*, 26(December), 459-469.

Schmeichel, B. J., Baumeister, R. F. & Vohs, K. D. (2003). "Intellectual Performance and Ego Depletion: Role of the Self in Logical Reasoning and Other Information Processing"*Journal of Personality and Social Psychology,* 85(1), 33-46.

Tabachnick, B. & Fidell, L. (2007). Using multivariate analysis (5 th Ed.) . Needham Heights, MA: Allyn & Bacon.

Tice, D., Bratslavsky, E. & Baumeister, R. (2001). "Emotional Distress Regulation takes Precedence over Impulse Control: If You Feel Bad, Do It!". *Journal of Personality and Social Psychology*, 80(January), 53-67.

Tversky, A. & Kanheman, D. (1981). "The Framing of Decisions and the Psychology of Choice". *Science*, 211(4481), 453-458.

Valence, G., d'Astous, A., & Fortier, L. (1988). "Compulsive Buying: Concept and

Measurement". *Journal of Consumer Policy*, 11, 419-433.

Vohs, K. & Heatherton, T. F. (2000). "Self-Regulatory Failure: A Resource-Depletion Approach". *Psychological Science*, 11(3), 249-254.

Vohs K., Baumeister, R. & Ciarocco, N. (2005). "Self-Regulation and Self- Presentation : Regulatory Resource Depletion Impairs Impression Management and Effortful Self-Presentation Depletes Regulatory Resources". *Journal of Personality and Social Psychology*, 88(4), 632-657.

Vohs, K. (2006). "Self-Regulatory Resources Power the Reflective System: Evidence From Five Domains". *Journal of Consumer Psychology*, 16(3), 217-223.

Vohs, K. & Faber, R. (2007). "Spent Resources: Self-Regulatory Resource Availability Affects Impulsive Buying" *Journal of Consumer Research, 33*(March), 537-547.

Vohs, K., Schmeichel, B., Nelson, N., Baumeister, R., Twenge, J. & Tice, D. (2008). "Making Choices Impairs Subsequent Self-Control: A Limited-Resource Account of Decision Making, Self-Regulation, and Active Initiative". *Journal of Personality and Social Psychology*, 94(5), 883-898.

Watson, D., Clark, L. & Tellegen, A. (1988). "Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales". *Journal of Personality and Social Psychology*, 54(6), 1063-1070.

Wertenbroch, K. (1998). "Consumption Self-Control by Rationing Purchase Quantities of Virtue and Vice". *Marketing Science, 17*(4), 317-337.

Zhang, Y. & Shrum, L. J. (2008). "The Influence of Self-Construal on Impulsive

Consumption" *Journal of Consumer Research*, *35*(February), 838-850.

8. APPENDIX

APPENDIX 1

Pilot Study 1

Produto 2: Drops MENTOS Mint Single 38G

1. Interesse em incluir no leque de produtos?

Nada Interessante	1	2	3	4	5	6	7	Muito Interessante

Produto 3: Caderno Espiral Basic Azul A5 80 Folhas 70gr Pautado

1. Interesse em incluir no leque de produtos?

Nada Interessante	1	2	3	4	5	6	7	Muito Interessante

APPENDIX 2

Crenças sobre Auto-Regulação

Gostaríamos de saber a tua opinião acerca das características das pessoas impulsivas. Nesse sentido pedimos-te que coloques uma cruz num número de 1 (Discordo Totalmente) a 7 (Concordo Totalmente), consoante a tua opinião em relação às frase seguintes.

1. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa feliz.
2. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa contente.
3. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa alegre.
4. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa satisfeita.
5. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa preenchida.
6. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa vazia.*
7. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa optimista.
8. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa pessimista.*
9. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa triste.*
10. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa deprimida.*
11. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa ansiosa.*
12. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa tensa.*
13. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa bem-disposta.
14. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa sociável.
15. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa amigável.
16. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa prestável.
17. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa hostil.*
18. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa egoista.*
19. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa isolada.*

20. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa que gosta de estar em novas situações onde que não sabe o que vai acontecer.

21. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa que por vezes faz coisas loucas só para se divertir.

22. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa com uma atitude positiva de que tudo tem uma solução e as coisas acabam sempre bem.

23. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa que tem muitos amigos.

24. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa que se irrita quando ocorrem situações inesperadas.*

25. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa stressada.*

26. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa com tendência para se sentir mal humourada.*

27. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa relaxada.

28. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa bem sucedida na sua profissão.

29. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa que alcança muitas coisas na vida.

30. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa tem ou virá a ter no futuro muitas poupanças e/ou bens materiais.

31. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa ambiciosa.

32. Na minha opinião, uma pessoa que seja impulsiva, é uma pessoa trabalhadora.

*itens invertidos