

## Tilburg University

### Consumption breakdowns

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## **CONSUMPTION BREAKDOWNS**

### **On Avoiding and Embracing Temptations**

#### **Proefschrift**

ter verkrijging van de graad van doctor aan de Universiteit van  
Tilburg, op gezag van de rector magnificus, prof.dr. F.A. van der  
Duyn Schouten, in het openbaar te verdedigen ten overstaan van een  
door het college voor promoties aangewezen commissie in de aula  
van de Universiteit

op vrijdag 27 april 2007 om 10.15 uur door

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geboren op 21 mei 1974 te Lissabon, Portugal

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*To Nuno and Tomás, always*

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<sup>1</sup> Who does not take risks, does not benefit from it.

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# *Chapter 1*

## **Introduction**

Should we eat a chocolate muffin while on a diet? Should someone who is trying to save money buy the expensive red sweater that he/she is really wishing for? Should someone that is trying to control candies' intake choose for a large package of candies? In order to answer to these questions one needs to consider to what extent the outcomes of each of these actions are considered to affect consumers' self-regulatory pursuits. After a goal is set, consumers need to strive for it, choosing for behaviors that they believe are congruent with their long-term goals. In this striving process, consumers' beliefs play an important role determining strategies and behaviors that consumers may consider acceptable to engage in (Bain, Kashima and Haslam 2006), because beliefs, even when unconscious, shape consumers perceptions of reality affecting the way consumers' behave and decide (Eccles and Wigfield 2002; Lederman, Lederman and Kully 2004).

Beliefs to whether a given action will fulfil an intention (Boonzaier, McClure and Sutton 2005) and beliefs about to what extent one will be able to perform certain tasks (Eccles and Wigfield 2002; Malle and Knobe 1997) can affect the way consumers act and plan actions to attain their goals. As an example, beliefs about the nature of self-regulatory resources have been shown to influence consumers' ability and effort to exert self-regulation (Martijn et al. 2002). Also consumers' beliefs about the extent to which self-regulatory resources are malleable and unlimited have an influence on consumers' goal-directed behavior (Mukhopadhyay and Johar 2005). In addition, Tice, Bratslavsky and Baumeister (2001) showed that when participants were led to believe that impulsive acts would not lead to mood improvement, participants delayed gratification more effectively. Altogether, these studies highlight the importance of considering consumers' beliefs about behaving in certain ways and how this can affect consumers' ability to exert self-regulation. As outlined by Baumeister and colleagues (Baumeister, Heatherton and Tice 1994) self-regulatory failure many times occur not because consumers' self-regulatory resources are depleted, but instead because consumers try to exert self-regulation using ineffective and counterproductive ways. Although consumers believe that they are exerting self-control, misconceptions about the behaviors' effectiveness can contribute to behavior misregulation, leading to self-control failure. Interestingly, as stressed by Boonzaier et al. (2005), when some of the apparent self-evident intuitions/beliefs are put to empirical test, they many times turn out to be wrong and to not lead to the desired and expected outcome.

It seems then relevant to examine adequacy of some beliefs typically shared by consumers about the appropriate behaviors to exert self-regulation, analyzing to what extent these indeed contribute to the enhancement of consumers' ability to exert self-regulation.

That is the focus of chapter 2 and chapter 3. These two empirical chapters question some beliefs shared by consumers and their impact on consumers' self-regulatory ability. Chapter 2 challenges the general belief that consumers are better able to self-regulate consumption of tempting products when these are offered in small package sizes, showing that contrary to what most of us believe, the presentation of products in large package sizes, compared with small package sizes, better contributes to consumers' self-regulation. Chapter 3 questions to what extent activities that are incongruent with the focal goal indeed impair likelihood of goal attainment, showing that despite the general tendency of consumers to strictly engage in activities that are congruent to their overarching goals, it may be beneficial to engage in activities that are not congruent with overarching goals and that increase goal-striving persistence. In addition, since consumers seem to so often consciously engage in non self-regulatory acts that conflict with their long-term goals (Baumeister et al. 1994), it seems also relevant to understand beliefs that consumers have about the costs and benefits of exerting self-regulation. That is the focus of chapter 4. This chapter analyzes to what extent impulsive behaviors are indeed perceived by consumers as a negative and avoidant behavior, showing that low self-regulators are believed to possess a set of positive personal characteristics that actually contribute to consumers' happiness and that may explain consumers' willingness to fail in specific self-regulatory domains. Altogether, the three empirical chapters try to shed some light on why do consumers so often experience consumption breakdowns.

### **Self-Regulation and Goal-Striving**

Self-regulation in broad terms comprises any effort exerted by a human being to alter its own responses (Baumeister et al. 1994), or in more specific terms the exertion of control

by the self with the purpose of overriding short-term impulses that would undermine overarching goals, bringing the self into line with preferred standards (Vohs and Baumeister 2004). The term self-regulation and self-control are often used interchangeably, since both apply to the same basic concept: the need to exert control or self-regulate behaviors, in order to act in accordance with a desired end-state/goal.

The ability to exert self-regulation is typically considered to depend on three basic ingredients (Baumeister et al. 1994). First, it depends on consumers' ability to define the standards through which they want to orientate their behaviors, usually referred as goals (Baumeister 2002). A goal is defined as a desired end-state and it embraces the need of the self to regulate his/her actions to be able to attain the specific goal (Baumeister et al. 1994). Second, it depends on consumers' ability to monitor progress towards the goal, in order to keep track of the relevant behavior (Baumeister 2002, Carver 2004). Consumers need to be able to identify discrepancies between outcomes of immediate behaviors and their long-term goals in order to move the self towards the desired end state (Schmeichel and Baumeister 2004). Third, it depends on consumers' ability or strength to override short-term impulses in order to bring about the desired changes or responses (Baumeister et al. 1994; Hoch and Loewenstein 1991). After having set a goal, consumers face implementation problems, needing attention and energy to progress towards the goal (Mischel et al., 1996; Muraven and Baumeister, 2000).

In order to be able to pursue their long-term goals, consumers typically need to forgo immediate pleasurable experiences that are detrimental to reach their overarching goals. Although this sometimes involves resisting to simple and small temptations, it is not always easy, since the lure of momentary temptations is pervasive (Fishbach and Shah 2006). In

addition, it has been shown that consumers have a limited capacity for self-regulation (Muraven, Tice and Baumeister 1998), which reinforces the difficulty to resist even to very small temptations that undermine long-term goal pursuit. Indeed, after exerting self-control in a set of tasks, the difficulty to continue exerting self-control is enhanced since self-regulatory resources have been consumed in the former process (Baumeister et al. 1998). This phenomenon has been shown in a wide set of studies. For instance, it was found that if participants were forced to eat radishes instead of tempting chocolates, they would subsequently quit faster in performing other self-control tasks (Baumeister et al. 1998) and that previous exertion of self-control led participants to consume more alcohol in a situation where restraint intake was desired (Muraven, Collins and Nienhaus 2002). Also thought suppression, a typical self-control task, impaired consumers' ability to perform a physical stamina test (Muraven et al. 1998) and participants whose resources were depleted, were more likely to act on impulse (Vohs and Faber forthcoming). In these and other studies (see Appendix A for more detail) the results have been consistent and prevalent, all pointing to the conclusion that self-regulatory resources are limited and that after a previous exertion of self-control the strength or willpower to continue exerting self-control is impaired.

Taken together, self-regulation is a complex process that involves consumers' persistence, strength, motivation, and commitment in order to be able to override short-term impulses and to be able to move consumers closer to the desired end state. Every year millions of people start dieting and end up not attaining their goals, with the World Health Organization estimating that there are more than 1 billion overweight adults worldwide. A similar pattern is found in the goal of saving money, with financial problems being indicated

as one of the top reasons for crime in the United States<sup>2</sup>. The difficulty that consumers apparently have in exerting self-control in order to pursue their overarching long-term goals has led to an increasing interest in this topic and in the identification of factors that undermine consumers' self-control ability and that contribute to consumers' engagement in counterproductive activities. The lack of self-regulatory resources to proceed with self-regulation (Muraven and Baumeister 2000), a tendency to give primacy to affect regulation (Tice et al. 2001), a lack of monitoring progress towards the goal (Baumeister 2002), or simply a low motivation to attain the overarching goal in the first place (Muraven and Slessareva 2003) are some of the factors identified by previous research. This thesis adds then to this existent body of research examining how apparent well-grounded beliefs shared by consumers regarding the appropriate behaviors to exert self-regulation as also beliefs on the costs and benefits of exerting self-regulation can influence consumers' ability and willingness to exert self-regulation.

## **Dissertation Overview**

This dissertation is organized as follows. The first empirical chapter- *Sneaky Small Sins*-, questions the established belief that consumers are better able to self-regulate consumption of tempting products, as chocolates or chips, when these are offered in small package sizes. Interestingly, findings indicate that large package sizes can be better self-

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<sup>2</sup> United States- Uniform Crime Report-State Statistics from 1966-2005, <http://www.disastercenter.com/crime/>, 4/10/2006.

regulatory tools. Findings suggest that large package sizes, compared to small package sizes, are more likely to activate a conflict between indulging in short-term temptation versus long-term self-regulation, which prompts efforts to exert self-control. Results from two experimental studies provide support for the idea that although smaller packages are the ones more often chosen for self-regulatory purposes and indicated by consumers as self-regulatory facilitators, large packages actually contribute to better self-regulation reducing the likelihood of initiating consumption and leading to lower total quantities consumed. The findings contribute to the self-control literature and provide suggestions for public policy and social marketing, highlighting that in the case of self-regulation, small is not better.

The second empirical chapter- *When Behaving Badly is Good*- integrates goal-pursuit and self-regulation literatures, challenging the general belief that activities that are incongruent with focal goal should be avoided and proposing that for goals that require consumers to exert repeated self-regulatory behavior over time, as dieting or saving money, it may be beneficial to temporarily deviate strategically from direct goal pursuit, in order to eventually attain the goal. Results from three experimental studies demonstrate that the inclusion of *planned* moments of goal-relaxation in goal pursuit, even when counter-productive to *immediate* goal attainment, increase the likelihood of long-term focal goal attainment, showing that it can be good in the long-run to be bad in the short-run.

The last empirical chapter- *The Merry Impulsivity*- analyzes consumers' lay beliefs about the consequences of systematically acting on impulse, and its impact on consumers' happiness, challenging the presumed belief that impulsive behaviors are consistently and universally bad and that should at any cost be avoided. Results from two studies show that low self-regulators (impulsives), compared with consumers that persistently try to self-



regulate behaviors, despite achieving less in life, are believed to possess a set of characteristics (e.g., more social and with a more positive attitude towards life) that positively contribute to consumers' happiness, revealing the trade-off between being good and being happy that consumers appear to experience. These findings contribute to the self-control literature by offering a possible explanation why consumers frequently seem to "fail", persistently engaging in non self-regulatory activities.

Chapter 5 summarizes the main results of this dissertation and discusses implications for marketing and policy makers. It concludes with a discussion of limitations of the three empirical chapters and draws some potential avenues for future research that may contribute to a better understanding of the self-regulation phenomenon.

## *Chapter 2*

### **Sneaky Small Sins: The Perverse Impact of Small Package Sizes on Consumption Self-Regulation**

Products are increasingly offered in various package sizes, in particular single serving-sizes, and these single serving sizes are becoming smaller. For example, *Kraft Foods Inc.*, in 2003, started putting a cap on the portion size of single serve-packages as a social measure to help consumers fight obesity<sup>3</sup>. Also *McDonalds*, in 2004, as part of its initiative “Eat Smart, Be Active”, downsized the super-sized portions to cater to consumers’ growing preference for healthier foods. Moreover, many other products such as *Haagen-Dazs* and *Ben and Jerry’s* ice-creams, and *Pringles* and *Lays* chips are being offered in small packages as single-serving sizes. These developments rest on the assumption that when products,

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<sup>3</sup> <http://www.kraft.com/newsroom/07012003.html>, 20/10/2003

especially tempting products as the ones mentioned, are offered in these small packages, consumers are better able to exert self-regulation by restraining the total quantity consumed. This view is consistent with findings that small packages are perceived to be helpful in exerting self-control (Wansink and Park 2000), with consumers often even paying premiums for them (Wertenbroch 1998). For example, cigarettes are in many countries sold in a 10 cigarettes-pack instead of the common 20 cigarettes-pack, with consumers paying higher unit costs with the 10 units pack than the 20 unit pack --a premium to presumably keep control over the “daily amount”. The question that arises then is to what extent the presentation of products in these smaller quantities indeed contributes to consumers’ better self-regulatory ability. After all, a daily consumption of 10 cigarettes would still lead to a 3650 cigarettes smoke per year.

We propose that presenting tempting products in small sizes (the small “sins”) may have, contrary to what is intended, a negative effect on consumers’ self-regulatory ability. That is, in order for self-regulatory behavior to occur, consumers need to perceive the current consumption act as a self-control conflict in which attraction to a temptation hinders the pursuit of an overarching goal (Fishbach and Shah 2006). If behaviors do not produce a self-regulatory conflict, consumers will not activate self-regulatory strategies that could restrain the tempting consumption, thereby actually falling into temptation. As highlighted by Bishop Moussa (2006) “Sometimes we disregard small sins as being insignificant, but these small sins are actually more dangerous than big sins because they will grow.” The apparent tendency of consumers to believe that smaller quantities of tempting products are “acceptable” and to consider small packages as helpful self-regulatory tools can increase the likelihood of consumption than if products were offered in quantities considered to be

“unacceptable”, which could instigate consumption restraint. Therefore we propose that large package sizes may actually be better self-regulatory facilitators than small packages, because they are more likely to activate a self-control conflict and preventive control strategies to deal with it. In this way, small package sizes can lead to the perverse effect of increasing rather than reducing consumption, and thus possibly to the long-term negative effects that they intended to prevent.

The present research examines this phenomenon, in the context of different package sizes for tempting products that usually imply eating regulation (e.g., chips, chocolates, and candies). Study 1 analyzes the type of beliefs and predictions that consumers have regarding the consumption of tempting products in different package sizes. Study 2 examines consumers’ actual consumption behavior when in the presence of tempting products in different package sizes. Our findings provide support for the idea that although smaller packages are the ones more often chosen for self-regulatory purposes and indicated as self-regulatory facilitators, large packages actually contribute to better self-regulation. This demonstrates that, contrary to common belief, offering products in small package sizes may reduce self-control ability. This sneaky “small sin” effect contributes to consumption misregulation, and it reveals that, in the case of self-regulation, small is not better.

## **SELF-REGULATORY BEHAVIOR**

Consumers often need to control short-term impulses in order to achieve their overarching goals. Usually this involves a struggle between opposite behaviors, with consumers frequently failing to achieve their goals or desired end-states (Baumeister,

Heatherton and Tice 1994; Tice, Bratslavsky and Baumeister 2001). Despite the best intentions that consumers may have, self-control commonly fails, with consumers not being able to achieve the optimal long-term outcomes (Muraven and Slessareva 2003; Muraven, Tice and Baumeister 1998). Prior research has identified some of the reasons why consumers fail to exert self-control such as a lack of resources to proceed with self-regulation (Muraven and Baumeister 2000), a tendency to give primacy to affect regulation (Tice et al. 2001), a lack of monitoring progress towards the goal (Baumeister 2002), or simply a low motivation to attain the overarching goal in the first place (Muraven and Slessareva 2003).

Another, but remarkably understudied, possible reason is that consumers misregulate their behavior. Misregulation occurs when consumers are motivated to self-regulate, but use ineffective regulatory methods (Baumeister et al. 1994). Then, consumers can engage in active self-regulatory efforts but may do so in non optimal or counterproductive ways, opting for methods that are ineffective or that even may backfire. Although consumers believe that they are exerting self-control, misconceptions of the behaviors' effectiveness may lead to self-control failure. Therefore, independently of the level of self-regulatory resources, the need for affect regulation, and their motivation to attain the overarching goal, consumers may fail to exert self-regulation because they choose the wrong tools to proceed towards the desired end state.

In addition, specific efforts to self-regulate behavior are elicited by a control conflict, without which consumers will not try to resist the temptation and may simply be motivated to indulge in it (Baumeister et al. 1994; Fishbach and Shah 2006). Thus the self-control conflict between the desired end-state and the tempting behavior is what generates actions intended to move the self towards the overarching goal (Carver 2004; Schmeichel and Baumeister 2004).

In other words, consumers primed with tempting stimuli, activate the overriding goals with which the temptations interfere, making them aware of their overarching priorities and helping them resist the temptations (Fishbach, Friedman and Kruglanski 2003). Because small compared to large package sizes of tempting products tend to be perceived as harmless and even helpful to exert self-control (Wansink and Park 2000; Wertenbroch 1998), they may not elicit a conflict between indulging in the temptation and the overarching goals (e.g., to lose weight). They may be perceived as a “small sin” that does not interfere with current goal-pursuit. At the same time, we expect that a conflict with the desired end state will more likely be activated by large package sizes of tempting products (a “large sin”), which will prompt consumers to self-regulatory efforts to resist the temptation. Therefore, we hypothesize that,

**H1:** When consumers have self-regulatory concerns and are exposed to a tempting product, the likelihood of resisting temptation is higher if products are offered in large versus small packages.

Furthermore, we also predict that offering tempting products in small versus large package sizes may increase the total quantity consumed of the product, because consumers perceive the small package sizes as helpful tools to self-regulate consumption (Wansink and Park 2000; Wertenbroch 1998). After the decision to initiate consumption, consumers are likely to put less effort into controlling the quantity that is eaten when the tempting products are presented in small versus large packages. It has been shown that consumers have difficulty to regulate intake especially when the food is served in small portions, due to failures at monitoring food intake (Baumeister et al. 1994; Polivy 1976). Moreover, when the presented amount of the product and the acceptable amount are perceived to be close,

consumers tend to use more of the product –an assimilation effect- than when the supplied amount and the acceptable range are perceived to be different –a contrast effect (Folkes, Martin and Gupta 1993). Therefore, when tempting products are presented in small package sizes, the supplied amount (package quantity) is likely to be treated as the acceptable amount to be consumed and thus the entire package will be consumed. Following our previous line of reasoning, we also expect that large packages are more likely to activate the overarching restraint goals, and therefore will instigate higher efforts to monitor and control the quantity consumed, where no “acceptable” consumption quantity is signaled by the package size. We hypothesize that,

**H2:** When consumers have self-regulatory concerns, small compared to large package sizes of tempting products will lead to higher total quantities consumed.

Support for both hypotheses would show that offering tempting products in small packages may have the perverse effect of not triggering self-regulatory efforts, contributing to self-regulatory failure. Previous research on the effects of different package sizes on consumption behavior has emphasized products that perform utilitarian functions (e.g., cooking oil, toilet bowl cleaner, laundry detergent; Folkes et al. 1993; Wansink 1996) and thus do not entail urges or desires that might promote over-consumption. The findings indicate that consumers tend to consume more from large packages (Wansink 1996) and that consumers are sensitive to the perceived supply, consuming less when supply decreases (Folkes et al. 1993). However, the nature of the decision-making process of utilitarian products differs from that of tempting products (Dhar and Wertenbroch 2000; Hirschman and Holbrook 1982). Tempting products’ consumption involves desire, temptation and urge to buy, and once triggered encourages immediate consumption (Rook 1987). In addition, the

consumption of tempting products often needs to be restrained (e.g., chips, candies, chocolate) and is commonly linked with “behaving bad” (Rook and Fisher 1995) and self-control failure (Baumeister 2002; Herman and Polivy 2004). Then, once a self-control conflict is triggered, it may benefit the consumer who has self-regulatory concerns.

Our predictions are tested in two studies. Study 1, which comprises two separate experiments, tests the basic proposition that small packages tend to be perceived to be more helpful to self-control and that therefore small packages are preferred to large packages. In study 1a we assess consumers’ beliefs with respect to offering products in different package sizes, asking them to list reasons that could lead to choosing and not choosing tempting products in different package sizes. In study 1b we assess consumers’ predictions regarding which type of different package sizes supports consumption self-regulatory behavior best. Since it has been shown that when individuals are asked to generate reasons to engage in a certain behavior these can have an influence on their subsequent attitudes (Wilson, Hodges and LaFleur 1995), we opted to assess the influence of offering tempting products in different package sizes on real consumption behavior in a separate study -Study 2. In this study we use behavioral measures of consumption and test to what extent larger as compared to smaller packages indeed lead to higher ability to exert self-control, analyzing the likelihood of opening packages and actual consumption behaviors.



## **STUDY 1- CONSUMERS BELIEFS REGARDING DIFFERENT PACKAGES FORMATS EFFECTS ON CONSUMPTION**

Study 1 comprises two parts (study 1a and study 1b) that jointly test consumers' general beliefs about consuming products in different package formats (small vs. large), analyzing if indeed small package sizes are perceived as self-regulatory facilitators. Study 1a tests the basic proposition that small package sizes are perceived to be helpful self-regulatory tools to restrain the quantity consumed, using content analysis to assess the extent to which consumers spontaneously generate self-regulatory beliefs associated with consumption of small packages. Study 1b re-tests in an experimental study this proposition, analyzing which of the package sizes (small vs. large) is perceived to be the better tool to self-regulate consumption, using forced-choices.

### **Study 1a- Method**

59 participants volunteered and received 5 euros. This study had a 2 (package formats: large, small)  $\times$  2 (reasons to choose, reasons not to choose) within-subjects design. Participants were told, "Several products that can be bought in the supermarket are offered in various package formats. We are interested in understanding what motivates consumers to choose for some package formats instead of others". Participants then read "Imagine that you are in the supermarket in front of the chips' shelf. Chips are offered in two different package formats: format A, one single bag with 200 gr. of chips and format B, a bag that contains 4 smaller packages of 50gr. each." After reading that both the price and the total quantity of chips were similar for the two package formats, participants were asked to write down

reasons that would lead them to choose or not to choose each of the two package formats. Both the order of the two different package formats (format A and format B) and the type of choice (reasons to choose, reasons not to choose) were presented in randomized order to prevent order effect. The reasons provided by the participants were content-analyzed (Weber 1990). The main purpose was to assess to what extent small packages versus large packages are commonly associated with a higher ability to exert self-control. Finally, for control purposes, participants completed the Concern for Dieting Scale (Herman and Polivy 1975; 5 items) and indicated some demographic characteristics.

## **Results and Discussion**

Following Weber (1990) we first created a coding-scheme. Since our prime interest was in assessing if participants would elicit eating self-regulatory concerns as reasons to choose the small packages and to not choose for the large package, the coding scheme included just two categories: eating control concerns and other reasons. The *eating control concerns* category was defined as “all reasons that explicitly indicate concern with avoiding eating too much, with dieting, with higher ability to control quantity eaten, and with avoiding to gain weight” while the *other reasons* included all other reasons not related with eating control concerns. Next, two independent coders categorized each given reason provided by the participants into one of the two categories. The inter-coder reliability was initially of 94% (based on 389 provided reasons), and all inconsistencies were resolved by discussion. The *Eating Control Concerns* category included reasons like “to avoid eating too much” to choose, and reasons like “not good for diet” not to choose for one of the package sizes. The *No Eating Control Concerns* category included reasons like “good to share with others” to

choose and included reasons like “bad for environment” not to choose for one of the package sizes. Frequencies of the content categories are presented in table 2.1.

**Table 2.1.** Reasons to choose and to not choose small and large packages: study 1a

	Reasons to choose		Reasons to not choose		$\chi^2(1)$
	Small Packages (4*50 gr.)	Large Package (200 gr.)	Small Packages (4*50 gr.)	Large Package (200 gr.)	
Eating Control Concerns	32	1	1	23	45.36 ***
Other Reasons	84	103	80	65	3.43
Total number of reasons	116	104	81	88	

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ;

A Chi-Square test on the *Eating Control Concerns* category indicated that, as expected, the distribution of this category was significantly different across the four groups ( $\chi^2(1) = 45.36, p < .001$ ) with eating control concerns being mostly reported as reasons to choose for the small packages and as reasons not to choose for the large package sizes (reasons to choose: small = 32, large = 1;  $z = 5.52, p < .001$ ; not to choose: small = 1, large = 23,  $z = -4.63, p < .001$ ). This supports our hypothesis that smaller packages are perceived to be self-regulatory facilitators and that larger packages are perceived to be self-regulatory threats. No significant differences were found on the distribution of the *other reasons* category across the four groups ( $\chi^2(1) = 3.43, n.s.$ ).

Furthermore, with the intent of understanding whether participants that listed *Eating Control Concerns* had high self-regulatory concerns, a median-split analysis was done on the Concern for Dieting scale (Herman and Polivy 1975;  $M = 2.12$ ,  $SD = .52$ ,  $Max = 3.6$ ,  $Min = 1.2$ ,  $\alpha = .65$ ; 5 items). Participants were then categorized as Heavy Dieters or Light Dieters. Of the 32 participants that expressed eating control concerns as reasons to choose for the small packages format, 28 were heavy dieters ( $z = 6.0$ ,  $p < .001$ ). A similar pattern was found for the elicited reasons to not to choose for large packages, with 18 of the 23 participants showing high dieting concerns ( $z = 3.83$ ,  $p < .01$ ), revealing that heavy dieters are indeed more likely to elicit reasons related with eating control concern category and to associate small packages with good self-regulatory tools. Thus, small package sizes tend to be perceived to help self-regulation of consumption, especially by those that have high self-regulatory concerns. 56% of the participants spontaneously generated *eating control concerns* as a reason to buy the smaller packages. Consistently, 39% of the participants indicated *eating control concerns* as one of the reasons to not choose for the large packages.

These results demonstrate that consumers associate different package formats to different self-regulatory effects. In study 1b we build on this and opted to investigate this general belief by asking participants to explicitly compare the two different packages formats.

### **Study 1b- Method**

40 undergraduate students (13 females and 27 males) volunteered and received €5 for their participation in a set of studies. This study had a within-subjects design, with

participants comparing two different package formats (large versus small). Participants read first the following scenario:

Imagine that you are shopping in the supermarket. Tonight you are going to watch your favorite movie on DVD at home. You just got the special extended DVD edition with the director's cuts. Now you intend to buy some snacks that you might consume during the movie. You are looking forward to a nice evening! The products that you are going to buy are for your own use.

Participants were then presented with three sets of photos of popular products that are consumed while watching TV (chips, M&Ms, and peanuts) in two different package formats (format A: one single large bag of the product, and format B: bag with individually wrapped small packages of the product). Participants were then asked to indicate which package format they would more likely choose for each of the products. Both the total quantity of the products and their price was the same for both package formats, in order to assure comparability. By asking participants to choose between the two formats we wanted to assure that they really processed the characteristics of the two different package formats. After having indicated their choice, participants also indicated which of the two package formats fitted best with the statements shown in table 2.2. These statements tapped self-regulatory effectiveness (first three items, based on the list of reasons elicited by participants in study 1a), and usage convenience (fourth item) and affect (last two items) as control statements.

## Results and Discussion

The results are presented in table 2.2 and they clearly show that smaller packages are perceived to be self-regulatory facilitators. Indeed, 75% of the participants indicated that the bag with small packages would better allow them to resist to temptations than one single large package ( $\chi^2(1) = 10.00, p < .01$ ). In addition, 70% of the participants indicated that they would be better able to self-regulate their consumption behavior with the bag with small packages ( $\chi^2(1) = 6.40, p < .05$ ). Regarding potential overeating, 82% of the participants indicated that they would eat more than they intended to with the one single large package format ( $\chi^2(1) = 16.90, p < .001$ ). All other variables showed no significant differences between package formats.

**Table 2.2.** Preferences Between Different Package Sizes: Study 1b

Statements	Small Packages	Large Packages	$\chi^2(1)$
It is easier to resist to temptation when I buy....	30	10	10.00 **
I eat more than I intended to when I buy...	7	33	16.90 ***
I am better able to self-regulate when and how much do I eat when I buy...	28	12	6.40 *
It is more convenient to use...	14	26	3.60
I am more concerned about controlling my weight when I buy...	18	22	.40
Usually my feelings associated with the purchase are more negative when I buy...	22	18	.40

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Jointly, the results of studies 1a and 1b show that consumers believe that small packages, compared to large packages, allow better self-regulation. In study 1a consumers in an open-ended format indicated “eating control concerns” (e.g., to avoid eating too much) as one of the reasons to choose for the bag with small packages and to not choose the large package. The majority of participants that elicited such reasons had, as we predicted, high-self-regulatory concerns. These results were consistent with those of study 1b in which consumers indicated that smaller packages would better allow them to self-regulate their behavior (e.g., It is easier to resist to temptations when I buy...). This demonstrates that small package sizes are perceived to be helpful self-regulatory tools. Study 2 tests with actual consumption behavior measures, if that is indeed the case. More specifically, we test if consumers with self-regulatory concerns are better able to restrain consumption when in the presence of small versus large package sizes.

## **STUDY 2- CONSUMING POTATO CHIPS**

The context of this study is the consumption of potato chips from small and large bags while watching television. Packaging characteristics may influence usage behavior long after it has influenced purchase (Wansink 1996). Research has shown that stockpiling increases the consumption quantity (Chandon and Wansink 2002), that consumers tend to consume more of a product when they perceive the unitary costs to be lower (Wansink 1996), that product elongation influences product perceived capacity (Raghubir and Krishna 1999; Wansink and Ittersum 2003), and that the perceived supply of the product raises the quantity that is

consumed (Folkes et al. 1993). However, we are not aware of research analyzing whether, independent of the supply, package size influences consumption and, more specifically, consumers' self-regulatory ability. This study analyzed to what extent small package sizes are indeed helpful to self-regulate consumption behavior. It tested our hypothesis 1 and 2 which specified that when consumers have self-regulatory concerns they will less likely consume a tempting product when it is offered in a large package size than when is offered in a small package size, and which also suggested that small compared to large package sizes may lead to higher total quantities consumed.

## **Design and Procedure**

104 undergraduate students (41 females and 63 males) volunteered to participate and received €6. The experiment had a 2 (package sizes: small vs. large) × 2 (self-regulatory concerns: control vs. primed) between-subjects design, and participants were randomly assigned to one of the four conditions ( $n_{\text{small, primed}} = 26$ ,  $n_{\text{small, control}} = 27$ ,  $n_{\text{large, primed}} = 24$ ,  $n_{\text{large, control}} = 27$ ).

Participants in the *control* condition participated first in an unrelated experiment. Participants in the *primed* condition participated in a *supposedly* unrelated experiment on “Students and Body Satisfaction,” which aimed to prime their self-regulatory concerns. To this aim, participants read that “this study is on students’ overall satisfaction regarding their body shape” and they were asked to fill in three different scales: the 10-item Body Satisfaction scale (e.g., “I like the shape of my buttocks”; Garner, Olmstead and Polivy 1983), the 7-item Drive for Thinness scale (e.g., “I am terrified of gaining weight”; Garner et



al. 1983), and the 5-item Concern for Dieting Scale (e.g., “Would a fluctuation of 2,5 kg affect the way you live your life?”; Herman and Polivy 1975). After completing the scales, participants read “now we would like to assess some of your body measures in order to calculate the average Body Mass Index of students of this university”. Next they were asked to join the experimenter who would help them weigh themselves, and measure their height, hips, and waist. To further induce self-awareness (Carver 1974), a big mirror was placed in front of the weighing scale. The mirror was positioned such that participants would see their body shape reflected in it. In this way, self-regulatory consumption concerns were unobtrusively primed.

After this, participants started the seemingly unrelated “Ad Evaluation Study”. This study was computer-based using the program Authorware 6.0 (Macromedia Inc. 2001) and took about 30 minutes to complete.

Participants first read that the purpose of the study was to assess and understand their reactions and opinions about TV commercials. Then, to increase the believability of the cover story, participants were asked to indicate on 7-point scales their general opinion about TV commercials (e.g., “TV commercials are funny to watch”; not at all-very much), followed by an example of the main task that they were going to perform: the ad evaluation task. Then, participants read:

*During the next 20 minutes you will perform an “ad evaluation” task. Since most commercials are usually watched at home, we want to recreate as much as possible a home environment while you watch the commercials. Therefore, we also included an extract from a “Friends” episode (sitcom) to mimic regular TV viewing. Moreover, since previous studies have shown that 70% of the snacks are consumed while*

*watching TV, next to the computer you'll find a bowl with chips that you can eat while doing this study.*

Located next to each computer, was a big bowl with potato chips in one of the different packages' sizes (small = 45 gr., large =200 gr.). For both conditions the bowls contained about the same total quantity of chips (two large packages = 400 gr. vs. nine small packages = 405 gr.). Potato chips were used as stimuli since it's a prototypical impulse product (Werthenbroch 1998). Participants were then presented with one ad sequence of three commercials, followed by an extract of 7 minutes from a Friends episode, followed by a second ad sequence of 8 commercials. After each ad sequence, participants indicated which commercial they enjoyed most, disliked most, and remembered better. All commercials were humorous. Before and after the sequence of commercials and the "Friends" extract, participants were also asked to assess their current emotions (5 positive and 5 negative emotions, see below for details). At the end of the study, participants answered questions about the chips' consumption experience (e.g., "did you eat any of the chips?"), and to funnel debriefing questions (e.g., "what do you think the purpose of this experiment was?"; Bargh and Chartrand 2000).

## **Dependent Measures**

*Consumption Behavior.* There were two measures of consumption behavior. The first is whether or not a bag of chips was opened and the second was the quantity of chips consumed (in grams).

*Decision deliberation.* Participants indicated after completing all the ad evaluation sequence, how much time they spent deciding to open the chips packages (1 = no time at all, 7= very much time).

*Affect.* Eight emotions from Richins' (1997) consumption emotions set (e.g., contented and unfulfilled) and two other consumption emotions (good and relaxed) were included to assess to what extent differences in consumption behavior patterns could have been caused by different emotional states. Participants indicated on 7-point scales, before they started the "ad evaluation" task, how much they experienced each emotion (pre-measure; not at all-very much). This was repeated after the "ad evaluation" task (post-measure). Emotions were grouped in positive ( $\alpha_{\text{before}} = .81$ ;  $\alpha_{\text{after}} = .85$ ) and negative emotions ( $\alpha_{\text{before}} = .83$ ;  $\alpha_{\text{after}} = .88$ ). Affect indexes were then calculated by subtracting the average of the negative emotions from the average of the positive emotions (Yeung and Wyer 2004).

*Willingness to Pay.* In order to measure the utility associated with the consumption of chips in each of the specific package formats, participants indicated in euros how much they would be willing to pay for a 1 kg box filled with packages similar to the ones located next to their computer (e.g., "In the bowl standing next to the computer you had several packages of chips (45 gr): Please indicate how much would you be willing to pay for a box with 22 of these packages (about 1000 gr)").

*Control Variables.* Before the start of this study, participants were asked to indicate on a 7-point scale how hungry they were (Herman and Polivy, 1975). This item was presented in a battery of other unrelated items and was used as a covariate in the analysis.

Participants' consumption chips habits were also assessed by asking participants to indicate on a 7-point scale how frequently they consumed chips (never/ very frequently). Following the methodology proposed by Bargh and Chartrand (2000), we assessed at the end of the experiment how suspicious participants were of the real purpose of the experiment by asking them to indicate what, in their opinion, the purpose of the experiment was, what the experiment was trying to study, if there was something unusual in the experiment and if they had any specific goal while participating in the experiment. None of the participants identified the purpose of the study.

## **Results and Discussion**

The results, shown in table 2.3, support hypothesis 1 that large package sizes help consumers with self-regulatory concerns to better resist temptations than small package sizes do. When participants were primed with self-regulatory concerns, the likelihood of opening the large package sizes was significantly smaller than the likelihood of opening the small package sizes ( $P_{\text{primed, small}} = 58\%$ ,  $P_{\text{primed, large}} = 29\%$ ,  $z = 2.03$ ,  $p < .05$ ), while in the control group the likelihood of opening the different package sizes did not differ significantly between small and large package sizes ( $P_{\text{control, small}} = 74\%$ ,  $P_{\text{control, large}} = 56\%$ ,  $z = 1.42$ , *n.s.*).

Next, an ANOVA on the quantity of chips consumed (considering only those participants that consumed the chips) indicated a significant interaction effect between priming and package sizes conditions ( $F(1, 53) = 4.10$ ,  $p < .05$ ). A simple effects analysis indicated that consumption of chips from larger packages was higher in the control condition ( $M = 59.0$ ) than in the primed condition ( $M = 24.4$ ;  $F(1, 53) = 8.39$ ,  $p < .01$ ), in fact more

than double. No significant differences were found in the small package conditions ( $M_{\text{control}} = 50.9$ ,  $M_{\text{primed}} = 46.5$ ;  $F(1, 53) = .25$ , *n.s.*). This suggests, consistent with hypothesis 2, that small packages did not activate a self-control conflict and thus did not activate efforts to control the total quantity consumed. In addition, planned comparisons indicated that when participants were primed for self-regulation and were in the presence of large packages the total quantity consumed differed, as expected, from the other conditions ( $M_{\text{control, small}} = 50.9$ ,  $M_{\text{control, large}} = 59.0$ ,  $M_{\text{primed, small}} = 46.5$ ,  $M_{\text{primed, large}} = 24.4$ ;  $t(53) = -2.63$ ,  $p < .05$ ).

**Table 2.3.** Consumption of Small and Large Packages: Study 2

Variables	Control		Primed	
	Small Packages (n = 27)	Large Package (n = 27)	Small Packages (n = 26)	Large Package (n = 24)
Likelihood of opening	74% <sup>a</sup>	56% <sup>a</sup>	58% <sup>a</sup>	29% <sup>b</sup>
Consumption Volume (grams) <sup>2</sup>	50.9 (24.1) <sup>a</sup>	59.0 (28.9) <sup>a</sup>	46.5 (30.0) <sup>a</sup>	24.4 (9.9) <sup>b</sup>
Decision Deliberation				
Consume	2.9 (1.6) <sup>a</sup>	2.5 (1.5) <sup>a</sup>	2.8 (1.3) <sup>a</sup>	4.6 (1.4) <sup>b</sup>
Not consume	1.9 (1.5)	3.3 (2.4)	2.6 (1.6)	2.1 (1.3)
Affect Index (Pre measure)	2.9 (1.3)	2.8 (1.4)	2.4 (1.7)	2.5 (1.8)
Affect Index (Post measure)				
Consume	3.0 (1.6)	4.1 (.9)	2.6 (1.6)	2.9 (1.4)
Not consume	3.5 (1.0)	2.6 (1.6)	2.8 (1.5)	2.7 (1.9)
Willingness to Pay (euros) <sup>1</sup>	5.4 (2.9) <sup>a</sup>	4.1 (1.7) <sup>b</sup>	5.0 (3.5) <sup>a</sup>	3.9 (1.9) <sup>b</sup>

Note: Means in the same row with different superscripts are significantly different at  $p < .05$ ; standard deviations are presented between parentheses.

<sup>1</sup> Amount of euros that participants are willing to pay for 1 box with 1 kg of small/large packages.

These findings were confirmed by a tobit regression analysis (because quantity consumed is non-zero and positive; conditions coded as *control* = 0, *primed* = 1, *small* = 0, *large* = 1 ) to estimate the impact of the different conditions on total quantity consumed (Long 1997). Results indicated a significant interaction effect ( $\beta_{\text{priming}} = -5.23$ , *n.s.*,  $\beta_{\text{package\_size}} = 8.10$ , *n.s.*,  $\beta_{\text{interaction}} = -31.78$ ,  $p < .05$ ) demonstrating that when participants were primed for self-regulatory concerns and were in presence of large packages they consumed on average an estimated –31.78 grams less than participants in the other conditions. These results systematically support hypothesis 2 that proposed that when consumers have self-regulatory concerns they will better control consumption with large than with small packages.

The amount of deliberation that preceded each consumption decision was analyzed by including the consumption decision (consume, not consume) as a third factor. We hypothesized that, when consumers have self-regulatory concerns, the large package would more likely activate a self-control conflict, which would reduce the likelihood of opening the large compared to the small package. Therefore, participants primed with self-regulatory concerns, should engage in more deliberation to consume large packages compared with other conditions, reflecting the self-control conflict. The results support this reasoning. First, an ANOVA only on the participants that consumed chips, yielded a significant interaction effect ( $F(1, 53) = 5.88$ ,  $p < .05$ ) and a significant main effect for the priming condition ( $M_{\text{control, small}} = 2.9$ ,  $M_{\text{control, large}} = 2.5$ ,  $M_{\text{primed, small}} = 2.8$ ,  $M_{\text{primed, large}} = 4.6$ ;  $F(1, 53) = 5.33$ ,  $p < .05$ ). Thus, when consumers were primed for self-regulatory concerns, consumption decisions were preceded by more deliberation than when participants were not primed for self-regulatory concerns. Planned comparisons showed that, as expected, when participants were primed with self-regulatory concerns the deliberation was significantly higher than in the

other conditions ( $t(53) = 3.03, p < .01$ ). Second, when participants were primed for self-regulatory concerns, the decision to consume the large packages was preceded by significant more deliberation than the decision to consume the small packages ( $M_{\text{consume, large}} = 4.6, M_{\text{consume, small}} = 2.8, t(20) = -2.80, p < .05$ ). An ANOVA on the deliberation measure, considering only the participants that did not consume any chips, indicated no significant interaction and no significant main effects ( $p > .05$ ), as expected.

An analysis of the affect measure assessed before and after the ads evaluation task revealed no significant interaction or main effects (All  $F$ 's  $< 1$ , all  $p$ 's  $> .2$ ), ruling out alternative explanations of our findings in terms of emotion.

An ANOVA on the willingness to pay measure indicated a main effect for package size condition ( $F(1, 100) = 5.03, p < .05$ ). Independently of the priming condition, consumers were willing to pay more for a box with 1 kg of small packages than with 1 kg of large packages, suggesting that the consumers associate higher utility towards the small packages than large packages, as expected.

Taken together, the findings of this study demonstrate that consumers are better able to exert self-regulation with large packages than with small packages. The findings were consistent across different measures, showing that the likelihood of opening/consuming tempting products was smaller, that total quantity consumed was significantly lower, and that consumers tended to deliberate more about the decision to consume or not when products were presented in large versus small packages.

## GENERAL DISCUSSION

Despite the common idea that smaller packages are better self-regulatory tools than large packages, smaller packages may actually boomerang, enhancing the likelihood that consumption is initiated, and leading to higher quantities consumed than large packages do. Our research demonstrates that when consumers have consumption self-regulatory concerns they will less likely initiate consumption of tempting products when these are presented in a large package size and also that consumers will better restrain consumption with large package sizes than with small package sizes. This indicates that the general belief that small package sizes are helpful tools to self-regulate consumption of tempting products is a self-regulatory misconception, reducing consumers' ability to self-regulate consumption. Large packages are more likely to activate a self-regulatory conflict between indulging in temptation versus overarching goals, thus more likely prompting self-regulatory efforts. Thus, when it comes to the self-regulatory effect of package size, "large is better".

The current findings contribute to the self-regulation and package literatures in several ways. First, they amend the so far universal finding that large packages lead to higher quantity consumed (Folkes et al. 1993; Wansink 1996). We demonstrate that when consumers have self-regulatory concerns and products are tempting, large packages lead to lower rather than higher quantities consumed. The current findings highlight the important role that the products' nature and consumers' self-regulatory goals play in the effects of package sizes on consumption. Second, the results point to the importance of offering consumers the right tools to achieve their long-term goals, and to cope with temptations. Misregulation occurs when attempts at self-regulation are unsuccessful because the strategies used produce different results from the desired ones (Baumeister et al. 1994). The findings of



study 1 revealed the general belief that small package sizes are self-regulatory facilitators, while study 2 showed that large package sizes are the ones that should be considered self-regulatory facilitators. Therefore, lack of knowledge about the appropriate self-regulatory strategy may lead to self-control failure, despite high motivation and available resources. As indicated by Baumeister and colleagues (1994) this knowledge gap can have multiple origins. The present research highlights the relevance of identifying general misconceptions about effective self-control techniques. To our knowledge, the current research is the first to test recent ideas, about the benefits of self-control conflicts to long-term goal attainment (Fishbach et al. 2003), and how presumably innocent sins may backfire whereas potential big sins may prevent consumers from committing them.

More research is needed to understand to what extent the social context may influence total quantity consumed when being in the presence of different package formats. As stressed by Herman, Roth and Polivy (2003), depending on the circumstances, the presence of others may facilitate or suppress eating. Because our research was carried out in a environment without extensive social interactions, it seems interesting to assess the impact that social influence may have on the total quantity consumed when products are offered in different package sizes. We speculate that “social presence” might enhance the perception of small packages as “acceptable” and further attenuate the consumption of large packages, and future research may test this. Identifying other factors that may influence consumers’ self-regulatory ability, beyond offering products in different package sizes, are thus of major importance.

In sum, the present research contributes to a better understanding of how the offering of products in different package sizes may affect consumption self-regulatory behavior. We show that the general belief that small package sizes are preferable to large packages when

consumers desire to regulate the consumption of tempting products is misguided and may lead to self-regulation failures. Because “failure to control food intake is one of our society’s most common self-regulatory difficulties” (Baumeister et al. 1994, 173) the perverse effect of small temptations on consumers’ self-regulatory ability cannot easily be put aside. The findings are relevant to brands such as Pringles and Lays that increasingly offer temptation products in small serving sizes, which appear harmless to the consumer who aims at self-restraint. Yet, our findings demonstrate that consumers are better able to regulate consumption when in the presence of large rather than small package sizes, which turned out to be sneaky small sins.

## *Chapter 3*

# **When Behaving Badly is Good: Self-Regulation by Strategic Goal Deviation**

The maxim of Anacharsis, "Play to work harder", seems to be on the right lines, because amusement is a form of relaxation, and people need relaxation because they cannot exert themselves continuously

Aristotle (Book X: Pleasure and the Life of Happiness, 269)

Is it smart to eat cake when you are on a serious diet to lose weight? And, is it a good idea to spend money on something flimsy when you are trying hard to save money? Indeed, there seems to be a general consensus that activities that are incongruent with focal goal should be avoided since they are detrimental to goal attainment, and thus that the answer to

the two opening questions is "no." The Overeaters Anonymous organization, for example, stresses the importance of sustained commitment to abstinence (Overeaters Anonymous 1995) and most diet plans impose inhibition of certain food categories that at any cost should be avoided over time. In addition, also in the goal pursuit literature there appears to be a broad consensus that activities must be continuously aligned with the focal goal in order to lead to goal attainment. For example, Hacker (1985, 267) argued that "activities that are not organized towards the goal are typically characterized as trial and error," and Fishbach and Shah (2006) stressed that "in order to accomplish the higher priority goals, individuals need to resist the momentarily salient, yet lower priority, temptations with which the more important goals are in conflict." Most important goals cannot be attained without considerable self-regulation and effort (Cantor and Blanton 1996), but this is hard and may at times lead to interruptions of goal pursuit (Baumeister, Heatherton and Tice 1994).

Surprisingly, given the prevalence of goal-interruptions in daily life, little research addresses how goal-striving can be managed over time to maximize the likelihood of long-term goal attainment. The present research examines to what extent consumers continuously need to perform behaviors that bring the desired end-state closer, and proposes that it may be good to temporarily deviate strategically from direct goal pursuit, in order to eventually attain the goal. When exerting effort in order to progress towards the goal, self-regulatory resources become depleted, thereby decreasing the ability to proceed with self-regulation (Baumeister 2002; Muraven and Baumeister 2000; Schmeichel and Baumeister 2004). Relaxation from goal pursuit is then needed in order to replenish self-regulatory resources and to allow individuals to proceed with self-regulatory activities. Moreover, such goal-relaxation activities may enhance the motivation to proceed towards the goal, may boost consumers'

experience of positive emotions, and enhance their ability to develop coping strategies, all of which contribute to increasing the likelihood of final goal attainment.

The present research focuses on goals that entail repeated behavior over time, such as when trying to lose weight. It studies the impact that goal-deviation behaviors -- those not aligned with the focal goal -- may have on the likelihood of goal attainment. While most extant research has been interested in identifying factors that contribute to self-regulatory failure, we analyze how can consumers enhance the likelihood of long-term progress towards the goal.

Findings from our three studies support that the likelihood of final goal attainment is higher when goal-relaxation activities are entailed, thus demonstrating that it can be good in the long-run to be bad in the short-run. Moreover, they show that the benefits of goal-relaxation even work in tasks of a few minutes only, and have cross-modal effects, with mental tasks affecting performance in physical tasks, suggesting the importance of these processes.

## **SELF-REGULATION AND PERSISTENT GOAL PURSUIT**

When trying to attain a specific desirable end-state, consumers need to choose between multiple goals (Kruglanski et al. 2002), restrain "irresistible" impulses (Baumeister 2002), and commit to persistently pursuing the current goal (Brunstein 1993; Locke and Latham 2002). Such systematic pursuit of goals over time can be quite exhausting since cognitive and other resources are spent repeatedly to keep commitment and focus on the current long-term goal. After having set a goal and having initiated goal striving, consumers

face various implementation problems that need to be solved successfully (Gollwitzer and Brandstätter 1997). Self-regulation, persistence, attention, and energy for the task at hand, are then necessary in order to produce behavioral coping and to suppress temptations, allowing progress towards the long-term goal (Mischel, Cantor and Feldman 1996).

Most research on goal pursuit and self-regulatory processes assumes that activities not aligned with the focal goal should be avoided, and that individuals engage in self-regulatory failures when initiate a specific behavior that goes against his/her long-term goals (Baumeister et al. 1994). Muraven and Slessareva (2003), for example, mention that in order to successfully exert self-control, individuals need to inhibit automatic, habitual, or innate behaviors, urges, emotions, or desires that would interfere with goal-directed behavior. From this perspective, it would seem that goal-deviating activities express a lack of self-regulation and, consequently, a failure in goal-striving that detracts from attaining the final goal. Consistent with such view, the blocking of unwanted influences by directing one's implementation intentions toward the ongoing goal pursuit or directing one's implementation intentions towards the suppression of anticipated unwanted responses have been proposed as effective strategies to keep focus on the current goal (Gollwitzer, Fujita and Oettingen 2004). Also the formulation of implementation intentions, that link anticipated critical situations to goal-directed responses (Gollwitzer 1999), or distracting individuals' attention from temptations (Mischel 1996) have been proposed as appropriate strategies to further the attainment of goals. Most of these strategies, however, seem especially concerned with enhancing the likelihood that the goal pursuit process is initiated, rather than with how consumers can manage sequences of self-regulatory acts towards longer-lived goals over

time. And, in particular for goals that entail self-regulatory behavior over some time, the ability to manage self-regulatory resources is an important issue.

The focus of the present research is on goals for which consumers need to ‘work’ on repeatedly, straining the limits of self-regulation (Mischel et al. 1996). Many goals that consumers typically pursue, such as dieting, saving, studying, and exercising, require inhibitory behaviors that need to be performed over extended periods of time, involving repeated self-regulatory effort. Such inhibitory behaviors drain self-regulatory ability, and progressively do so when inhibition is required over time (Muraven, Tice and Baumeister 1998; Schmeichel and Baumeister 2004). As a result, self-regulatory efforts run the risk of being interrupted or even stopped completely. In order to avoid such interruptions and to increase the likelihood of goal attainment, we propose that intermittent goal-striving plans, in which self-regulatory activity takes place in blocks of self-control, interspersed with planned goal relaxation periods, are beneficial to increase the likelihood of goal attainment, compared with straight-striving plans, in which all activities are aligned with the focal goal. During goal relaxation moments, consumers can engage in activities not subjected to the restrictions imposed by the focal goal, thereby replenishing their self-regulatory resources. We propose then that goal relaxation moments may be strategic in order to cope with further regulatory challenges and to contribute positively to long-term goal attainment.

Importantly, we propose that these goal-relaxation moments should be incorporated *a priori* in the plan to attain the goal. When not planned, goal-relaxation moments can be perceived as a self-regulatory failure, promoting lower motivation and poorer performance towards the goal (Soman and Cheema 2004). In addition, this could lead to a snowballing effect of self-regulation failure (Baumeister et al. 1994) where consumers after committing

the first offense or “sin”, engage in a sequence of failures that lead to a major breakdown of the current goal. Or, these could also lead to the "what-the-hell effect" (Cochran and Tesser 1996), where consumers give up current goal pursuit after having violated defined standards to attain the goal. We focus on planned goal-deviations here.

In sum, although extant research suggests that goal deviating behaviors are detrimental for goal attainment, we propose instead that planned goal-relaxation moments, even when non-congruent with overarching focal goals (e.g., eating chocolate cake while engaged in a weight-loss program), may actually enhance further self-regulation by replenishing self-regulatory resources, thereby strengthening goal persistence. Such planned goal-deviation leads to a pattern of intermittent goal pursuit rather than straight goal pursuit. We hypothesize then that,

**H1:** Planned intermittent goal pursuit leads to less depletion of self-regulatory resources than straight goal pursuit, thereby increasing the likelihood of long-term focal goal attainment.

Furthermore, we also predict that intermittent goal pursuit, will enhance motivation to proceed towards the goal, heighten the experience of positive emotions, and increase consumers’ ability to cope with temptations and to ward off distractions, leading altogether to higher likelihood of goal attainment. Motivation plays an important role in goal-striving processes (Locke and Latham 2002), because increased motivation to proceed towards the goal may compensate for temporary lacks of self-regulatory resources (Muraven and Slessareva 2003), thus enhancing the likelihood of goal attainment. We propose that the



anticipation of future goal relaxation activities will increase motivation to proceed towards the goal, thereby facilitating self-control (Mischel 1996).

We also propose that moments of goal-relaxation in a program of goal pursuit will be positively appraised, increasing consumers positive affect and reducing negative affect (MacLeod and Conwat 2005), leading to less emotional distress during goal-striving. And, the enhancement of positive affect can itself act as a psychological resource to deal with self-regulatory demands (Carver 2004). Therefore, we predict that planned intermittent goal-striving may contribute to higher levels of positive emotions and thus contributing to higher likelihood of goal attainment.

In addition, we predict that the possibility of engaging in goal relaxation activities will affect consumers' ability to cope with temptations and to ward off distractions. Coping strategies are defined as the thoughts and behaviors that consumers use to manage the internal and external demands of situations considered to be stressful (Folkman and Moskowitz 2004). The ability to develop coping strategies is of special importance to the process of overriding responses that are harmful to the goal, one of the basic components of self-regulation. This overriding process encompasses starting, stopping, changing or substituting a potential harmful response for another response congruent with current goal (Baumeister et al. 1994). Therefore, in order to successfully pursue their goal, consumers need to be able to develop coping strategies to be used during actual goal pursuit. Furthermore, the ability to generate coping strategies is sensitive to the demands and resources available at the moment of distress (Aspinwall and Taylor 1997; Folkman and Moskowitz 2004) suggesting that if self-regulatory resources are replenished, consumers will be better able to produce coping strategies. We predict therefore,

**H2:** Compared to straight goal pursuit, intermittent goal pursuit increases the motivation to continue, enhances consumers positive affect, and increases the ability to develop coping strategies, and thereby the likelihood of long-term focal goal attainment.

In sum, much is known about factors and mechanisms that impair consumers' self-regulatory ability (Baumeister et al. 1994) but much less is known about how consumers can increase their self-control ability and their capacity to cope with temptations and impulsive behaviors, increasing persistence to attain overarching goals. The latter is the focus of our research here. Despite the common idea that behaviors should always be aligned with the overarching goal, we propose that the planned inclusion of goal-relaxation moments in goal pursuit may be beneficial for the goal-striving process, increasing the likelihood of goal attainment.

Our predictions are tested in three studies. Study 1 tests the basic process in a controlled experimental setting using a behavioral measure of goal pursuit. It shows that intermittent goal pursuit indeed produces less self-depletion compared to straight pursuit, even when goal pursuit is a few minutes only. Whereas study 1 examines the predictions in a more general context, studies 2 and 3 focus on an important long-term goal for many: weight loss. Study 2 investigates whether intermittent goal pursuit, compared to straight pursuit, leads to higher motivation and to higher action likelihood of pursuing the goal. Finally, in study 3 participants simulate a dieting experience by making food choices for seven consecutive days, exploring the implications of intermittent goal pursuit on coping potential. The findings provide additional support that intermittent goal pursuit enhances ability to

develop coping strategies to deal with temptations, leads to lower depletion, and to more intense experience of positive emotions.

## **STUDY 1: EFFECT OF INTERMITTENT GOAL-STRIVING ON SELF-REGULATORY RESOURCES**

This study comprises two experimental studies that jointly test the underlying process by which intermittent goal pursuit affects self-depletion. In study 1a, we analyzed the effect of intermittent striving goal pursuit on self-depletion, using an established behavioral measure of self-regulation (Muraven et al. 1998)--the amount of time that participants spent holding a handgrip. In study 1b, we tested the effect of planned versus non-planned intermittent striving processes on consumers' self-regulatory ability, using the State Self-Control Capacity Scale (Muraven, Twenge and Tice 2005). Both studies were computer-based using the program Authorware 6.0 (Macromedia Inc. 2001) and each study took about 15 minutes to complete.

### **Study 1a -Design and Procedure**

58 undergraduate students (24 females and 34 males) participated in this experiment in exchange for a monetary compensation (six dollars). The experiment had a three-group design (control group, straight-striving process, and intermittent-striving process) and participants were randomly assigned to one of the groups ( $n_{\text{control group}}=18$ ,  $n_{\text{intermittent-striving}}=20$ ,  $n_{\text{straight-striving}}=20$ ).

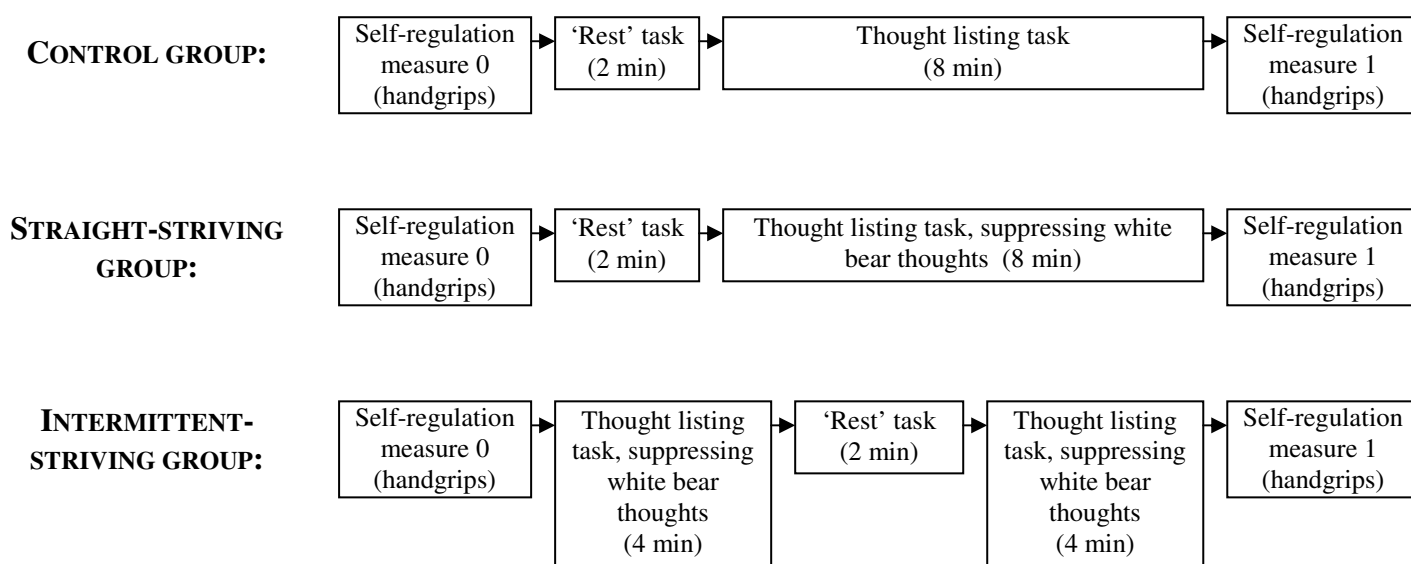
Participants were informed that the purpose of the experiment was to study the link between individual endurance and words usage. First, participants performed an endurance test, which was in fact our base measure of self-regulation. Next, participants performed a cognitive self-regulatory task (Wegner et al. 1987). Participants were asked to list their thoughts “while avoiding to think about a white bear”, because such thought suppression calls for mental control (Wenzlaff and Wegner 2000). Participants in the *control group* were simply asked to list their current thoughts, one thought per line, exactly the way they came up to their mind. Compared with thought suppression, thought expression is much easier, and thus was an adequate task for the control group (Muraven et al. 1998). Participants in the self-regulatory groups (straight-striving, and intermittent-striving) received the additional instruction that they had to avoid thinking about a white bear (thought suppression task) and that every time they were not able to suppress the thoughts about the white bear, they were to place a question mark in the margin of the paper they were writing their thoughts on. After completing this mental control task, participants were asked to perform another endurance test—the second measure of self-regulation.

For the two self-regulatory measures, we adopted the measure of self-regulation used by Muraven et al. (1998, study 1), assessing how long participants could continuously squeeze a handgrip. A handgrip is a hand-strengthening device, consisting of two handles connected by a metal spring. After completing the first self-regulatory measure, participants were informed about the sequence of tasks in the study. Participants in the *control group* and *straight-striving group* read that they would have two minutes of rest and then would perform a task for eight minutes (i.e., cognitive self-regulatory task). Participants in the *intermittent-striving group* read that they would complete a task for four minutes, followed by two

minutes of rest, and by four more minutes of the same task. The two minutes of rest was the planned-relaxation moment, during which participants could read the magazines that were located next to the computer. In total, all participants performed the tasks for 10 minutes.

Figure 3.1 shows the flow of activities during this experiment.

**Figure 3.1.** Flow of Study 1



### Dependent Measures

*Manipulation Checks.* Participants were asked to indicate on a 7-point scale how difficult it had been to control their thoughts (not at all difficult-very difficult).

*Self-Depletion.* Squeezing a handgrip is an established measure of self-regulatory ability (Muraven et al. 1998). Because individuals may differ in their natural ability to squeeze the handgrips, pre and post-measures were used to control for within-subject

variation. First, participants were asked to squeeze the handgrip as long as possible (see Figure 3.1., left side). A sheet of paper between the two handles of the grip allowed the experimenter to assess when the handgrips had begun to relax, and the paper to release. The amount of time that the handgrips were squeezed was measured with a stopwatch. Following Muraven and colleagues (1998) no feedback was given to the participants about their performance in the task. After completion of the thoughts' suppression tasks, participants were asked to squeeze again the handgrip as long as possible. Self-depletion scores were computed by subtracting each participant's initial handgrip-squeeze duration from the final duration (Muraven et al. 1998).

*Difficulty.* After completion of the self-regulation measures, participants were asked to indicate on a 7-point scale how difficult it had been to perform the endurance tests (not at all difficult-very difficult).

## **Results and Discussion**

Participants in the *straight-striving* group and in the *intermittent-striving* group rated the task of listing their thoughts as more difficult than participants in the control group ( $M_{\text{control group}} = 3.22$ ,  $M_{\text{straight-striving}} = 4.95$ ,  $M_{\text{intermittent-striving}} = 4.50$ ;  $F(2, 55) = 5.70$ ,  $p < .01$ ), confirming the efficacy of the manipulation. The control group differed significantly ( $p < .05$ ) from the other two conditions, which did not differ from each other.

In support of hypothesis 1, an ANOVA on the individual self-regulatory score indicated that participants in the *straight-striving* group showed higher levels of depletion (duration squeezing the handgrip) than participants in the *control group* and in the *intermittent-striving* ( $F(2, 55) = 4.56$ ,  $p < .05$ ). The *control group* and the *intermittent goal-*

*striving* group showed no significant differences in levels of depletion ( $t(36) = -1.46$ , n.s.), suggesting that including the goal-relaxation moment during the self-regulatory task allowed participants in the *intermittent goal-striving* group to replenish their resources to the same level as that of participants in the control group (Means are in table 3.1).

**Table 3.1.** Summary of Findings: Study 1-3

	Control group	Straight-striving	Planned Intermittent-striving	Unplanned intermittent-striving	F test
<b>Study 1a</b>					
Self-depletion <sup>1</sup>	6.97 <sup>a</sup>	13.32 <sup>b</sup>	.20 <sup>a</sup>		$F_{(2,55)} = 4.56$ *
<b>Study 1b</b>					
Self-depletion <sup>2</sup>			-.02	.29	$F_{(1,73)} = 5.78$ *
<b>Study 2</b>					
Motivation to pursue diet		3.83	5.05		$F_{(1,75)} = 10.91$ ***
Goal attainment expectations		3.46	4.14		$F_{(1,75)} = 6.44$ *
Perceived self-depletion		5.66	4.83		$F_{(1,75)} = 10.30$ **
Action likelihood		2.30	3.30		$F_{(1,75)} = 5.60$ *
<b>Study 3</b>					
Self-regulation		3.73	4.25		$F_{(1,57)} = 4.35$ *
Affect index		1.55	2.59		$F_{(1,57)} = 5.21$ *
Coping ability		5.10	6.43		$F_{(1,57)} = 6.40$ *

Note. — Means in the same row with different superscripts are significantly different ( $p < .05$ ).

. — \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

<sup>1</sup> Self-Depletion is measured by the change in time (seconds) that participants spent squeezing the handgrip, in seconds, from self-regulatory measure 0 to self-regulatory measure 1.

<sup>2</sup> Self-Depletion is measured by the average variation in the State Self-Control Capacity Scale assessed by subtracting from the self-regulation measure at time 0 the self-regulation measure at time 1.

Moreover, ANOVAs indicated no differences between groups on the experienced difficulty of the endurance tests (measure 0:  $M_{\text{control group}} = 4.33$ ,  $M_{\text{straight-striving}} = 3.85$ ,  $M_{\text{intermittent-striving}} = 4.10$ ,  $F(2, 55) = .39$ , *n.s.*; measure 1:  $M_{\text{control group}} = 4.55$ ,  $M_{\text{straight-striving}} = 4.90$ ,  $M_{\text{intermittent-striving}} = 5.10$ ;  $F(2, 55) = .653$ , *n.s.*), ruling out the possibility that the higher depletion of participants in the *straight-striving* group was due to higher difficulty in performing the task in that condition than in each of the other conditions. Thus, participants in both regulatory conditions--*straight-striving* and *intermittent-striving*-- spent exactly the same amount of time performing the self-regulatory task and perceived the task to be equally difficult, but showed significant different levels of depletion, supporting hypothesis 1.

### **Study 1b- Design and Procedure**

Using the same design as in study 1a for the *intermittent-striving* condition, we tested in study 1b the difference between planned versus non-planned goal-relaxation moments. Seventy five undergraduate students (33 females and 42 males) participated in this experiment in exchange for a monetary compensation (six dollars). None of them participated in study 1a. The experiment had a two-group design (planned intermittent-striving process, unplanned intermittent-striving process) and participants were randomly assigned to one of the groups ( $n_{\text{planned}}=38$ ,  $n_{\text{unplanned}}=37$ ). The same thought suppression task (Wegner et al. 1987) was used to manipulate regulatory exertion by asking participants in both conditions to list their thoughts, while avoiding thinking of a white bear. The two groups differed only in the *a priori* knowledge about the tasks' sequence. Participants in the *planned* group were informed that after the first task they would have two minutes of rest followed by another task similar to the first task, while participants in the unplanned group were only informed of



this rest period after completing the first task. Instructions included that during the rest period participants could read magazines (current popular magazines) located next to the computer. Participants in both groups performed exactly the same tasks.

## **Dependent Measures**

We used the same manipulation check as in experiment 1. To assess self-regulation ability, we used seven items of the State Self-Control Capacity Scale (Muraven et al. 2005) that showed higher reliability (e.g., "I feel drained,"  $\alpha_0 = .79$ ;  $\alpha_1 = .75$ ). We assessed the scale before the start of the self-regulatory tasks (self-regulatory measure 0) and after the completion of the tasks' sequence (self-regulatory measure 1). A self-depletion score was computed by subtracting for each participant the score on the final measure from the score on the initial measure.

## **Results and Discussion**

As expected, an ANOVA on the manipulation check revealed that the two groups did not differ on the experienced difficulty of the thought listing task ( $M_{\text{planned}} = 4.55$ ,  $M_{\text{unplanned}} = 4.32$ ;  $F(1, 73) = .354$ , *n.s.*), indicating that tasks were perceived to be similar in difficulty across groups. However, an ANOVA on the self-depletion scores indicated that participants in the *planned* group showed lower levels of depletion than individuals in the *unplanned* group ( $M_{\text{planned}} = -.02$ ,  $M_{\text{unplanned}} = .29$ ;  $F(1, 73) = 5.78$ ,  $p < .05$ ). This finding supports our prediction that prior knowledge of the possibility of engaging in goal-relaxation moments increases the ability to proceed with further self-regulatory tasks. Participants in the planned

intermittent condition experienced lower levels of depletion than participants that performed exactly the same task sequence but did not know in advance the possibility of engaging in a relaxation moment.

Importantly, the fact that self-regulatory tasks were performed just for a few minutes in both studies and that even so we found a lower depletion effect rules out the possibility that our findings could have been explained by simple fatigue. It is striking that mental thought control task exerted for a brief period of time interferes with participants' ability to perform a physical task—the self-regulation measure. The consistency of findings across both studies indicates that indeed intermittent goal pursuit leads to less strain on self-regulatory resources than straight-striving processes, thus contributing to higher likelihood of proceeding with self-regulatory tasks. The studies underline the importance that relaxation is planned and incorporated a priori in the goal pursuit.

The next two studies test the hypotheses in a consumption domain in which self-regulation plays a large role, namely dieting. Habits of eating and drinking are among the most common problematic failures of self-control (Baumeister et al. 1994), having the prevalence of obesity increased by about 10-40% in most European countries over the past 10 years (Rigby and James 2003) while in US approximately 127 million adults are overweight, 60 million obese, and 9 million severely obese (American Obesity Association 2005). Despite the high number of support groups, diet plans, and diet foods available, consumers are apparently challenged to regulate their eating behaviors. As stressed by Vohs and Baumeister (2004, 7) "eating is one of the most commonplace, yet least well understood, self-regulation domains", and dieters tend to interrupt their weight loss goals many times (Heatherton and Baumeister 1991). Thus, study 2 re-tests hypothesis 1 in a different setting and tests part of

hypothesis 2, namely that intermittent goal-striving increases the motivation to continue focal goal pursuit.

## **STUDY 2: EFFECT OF INTERMITTENT GOAL-STRIVING PROCESSES ON SELF-DEPLETION AND MOTIVATION**

77 undergraduate students (31 females and 46 males) participated in this study in exchange for a monetary compensation. This study had a two-group design (intermittent-striving diet, straight-striving diet) and participants were randomly assigned to one of the groups ( $n_{\text{intermittent-striving}}=37$ ,  $n_{\text{straight-striving}}=40$ ). The experiment was computer-based using the program Authorware 6.0 (Macromedia Inc. 2001).

Participants in each condition were asked to place themselves in the following situation: "You went to your family doctor and were told that you had to lose 9 kilos of body weight during the next two months. The doctor presented you with the following diet plan." Participants in the *intermittent-striving* condition were then given a diet plan where every six days of dieting were followed by one day of non-diet, where participants could eat normally. Participants in the *straight-striving* condition were given a diet plan that had to be strictly followed during the 2 months, without interruptions. A calendar was attached to each diet plan so that participants could visualize their day-to-day dieting efforts. Both diet plans were presented as plans of moderate difficulty and a list of things that participants were not supposed to eat was also presented (e.g., sugars, fat foods, caloric beverages). After reading the diet plans, participants were asked to answer questions while imagining themselves at two different moments during the two-months diet: in the situation of initiating the diet the immediate day (Pre-Diet measures) and after having followed the diet for the two complete months (Post-Diet measures).

## Dependent Measures

*Motivation and Goal Attainment Expectations (Pre-Diet Measures).* In order to assess motivation to follow the diet plan, participants were asked to indicate on a 7-point scale, "how motivated would you be to follow this diet" (not at all motivated-very much motivated). Participants' expectations regarding goal attainment were assessed by three items ( $\alpha = .70$ ) that had the purpose of capturing ease of following the diet, ability to control progress towards focal goal, and ability to pursue the diet (e.g., "How likely it is that you'll be able to strictly pursue the diet plan," not likely at all-very likely). All items were answered on 7-point scales.

*Self-Depletion (Post-Diet Measure).* Two items were used to assess predicted depletion after following the diet-goal ( $\rho = .40, p < .01$ ). Participants indicated on 7-point scales "How tired do you think you expect to be after following the presented diet plan for two months" (not at all tired-very much tired) and "How fed up do you expect to be after following the presented diet plan for two months?" (not at all fed up-very much fed up).

*Action Likelihood (Post-Diet Measure).* Participants were asked to indicate on a 7-point scale what the likelihood would be of initiating the presented diet in case they had to lose 9 kilos in the upcoming two-months (not likely at all-very likely).

## Results and Discussion

An ANOVA on the motivation measure revealed different motivation levels to proceed with the diet plan across conditions. Consistent with hypothesis 2, participants who were presented with the intermittent-striving diet plan indicated to be significantly more motivated to pursue the diet than participants in the *straight-diet process* condition ( $F(1, 75) = 10.91, p < .001$ ). See table 3.1 for means of dependent variables.

Goal attainment expectations were assessed by the average of the three relevant items. An ANOVA revealed that indeed participants in the intermittent-striving diet predicted to be more likely to attain the goal than participants in the straight-striving diet ( $F(1, 75) = 6.44, p < .05$ ). Furthermore, participants also predicted to feel more depleted when following the straight-striving diet than when following the intermittent-striving diet ( $F(1, 75) = 10.30, p < .01$ ), supporting hypothesis 1 that self-regulatory processes in which goal-relaxation moments take place lead to less depletion of self-regulatory resources, compared with self-regulatory processes in which goal-relaxation moments are not allowed.

Also consistent with hypothesis 1, the participants in the intermittent-striving diet condition indicated a higher likelihood of implementing the plan than participants in the straight-striving diet condition ( $F(1, 75) = 5.60, p < .05$ ). Following Baron and Kenny's (1986) procedure to test for mediation, we found that the effect of intermittent-striving processes on action likelihood ( $b_{intermittent} = .99, p < .05$ ) was mediated by motivation ( $b_{motivation} = .32, p < .05$ ;  $b_{intermittent} = .61, n.s.$ ; Sobel  $z = 2.01, p < .05$ ). These findings supported hypothesis 2 that intermittent goal-striving programs lead to increased motivation to continue with goal pursuit than straight-goal-striving programs. And, as stressed by

Emmons (1996), motivation underlying the personal strivings is an essential element to increase likelihood of goal attainment. This study extended the findings of study 1, showing that also in a dieting domain and over a longer period of time, intermittent-striving processes lead to lower impairment of self-regulatory resources than straight-goal processes. Moreover, we showed that the inclusion of relaxation moments, where consumers could detract from current diet pursuit, led to higher motivation to proceed with the diet, supporting hypothesis 2.

### **STUDY 3: IMPACT OF INTERMITTENT-STRIVING ON COPING ABILITY**

This study aims to provide additional support for the importance of including goal relaxation moments in goal pursuit. First, we test the effect of intermittent-striving versus straight-striving on consumers' ability to develop coping strategies. Consumers are daily exposed to many stimuli that elicit urges to behave against the overarching long-term goals. When striving to attain a specific goal, consumers must often forgo momentary pleasures, struggling between different behaviors (Fishbach and Shah 2006). The ability to develop coping strategies to deal with such temptations, in order to accomplish the overarching goal, is therefore important to increase likelihood of long-term goal attainment. If consumers have multiple means to attain the focal goal, the likelihood of success will be higher since this allows for substitutability of one means for another in case one mean results in failure (Kruglanski et al. 2002). Second, we test the hypothesized effect of intermittent-striving processes on consumers' experienced emotions. Finally, we provide additional evidence of the positive impact of intermittent goal-striving processes on the reduced impairment of self-regulatory resources.

59 undergraduate students (34 females and 25 males) participated in this study in exchange for a monetary compensation (6 dollars). This study had a two-group design (intermittent-striving diet, straight-striving diet) and participants were randomly assigned to one of the groups ( $n_{\text{intermittent-striving}}=30$ ,  $n_{\text{straight-striving}}=29$ ). The experiment was computer-based using the program Authorware 6.0 (Macromedia Inc. 2001).

In a similar vein as in study 2, participants were first informed that, "You just heard from your doctor that you need to lose 9 kilos during the next two months. Your doctor gave you a booklet with diet instructions and with a list of everything you are allowed to eat." Participants in the *straight-striving* condition read next "You quickly go through the booklet and realize that you can only consume 1500 calories per day (40% less calories than the average number of calories that an adult needs to maintain weight)". Participants in the *intermittent-striving* condition read that they could only consume up to 1300 calories per day and that after each 6 days of dieting they would have a whole day where they could choose what to eat up to 2700 calories. Participants in both conditions were asked to perform diets that summed up to a total of 10500 calories per week. Participants were then asked to imagine starting the diet and to choose from the list on the left side of the screen what they would choose to eat at each meal in diet-day 1. Participants had to choose what to eat for the three main meals of the day (breakfast, lunch and dinner) plus a snack. After choosing what to eat, participants were presented with the complete menu that they had chosen and asked to approve it before moving on to the next diet-day. This task was repeated for diet-day 2 to diet-day 6. For each meal, participants could choose among three options, which changed each day, assuring that participants would have access to a high variety of choices. The

majority of the meals was taken from healthy eating and dieting sites (e.g., [www.slimfast.com](http://www.slimfast.com)) and indicated the total number of calories of each meal.

After choosing the daily menus for the first six diet-days, participants were asked to predict how they would be feeling at that time during the actual diet on 12 different consumption emotions (6 positive and 6 negative emotions, see below for details). After completing this measure, participants in the *intermittent-striving* condition were told that "As indicated in your diet-booklet given by your doctor, today you can chose what to eat as long as you do not exceed 2700 calories. You have the possibility to choose some "delicious" food usually desired by people that are on a diet. Please indicate your choices in each meal box." Participants were then presented with a menu that included non-diet meals (e.g. salmon with spinach pasta and chocolate cake with baked fruit) and that summed up 2700 calories. Participants in the *straight-goal process* condition were simply asked to repeat same meal-choices as for the first six days of diet and were presented with the same kind of meals as for the first diet-days. After completing the seventh diet-day, participants were asked to imagine initiating the eighth diet-day and to complete the self-control measures, plus some more variables related with the diet-process (post-diet measures). Immediately after, participants in both conditions read the following instructions:

*Now please continue imagining yourself following the diet that your doctor just prescribed. After a long day at the university you are tired and go home to prepare dinner. First, you go to the supermarket to buy some groceries. On your way to the cashier you pass through the snacks corridor and you really feel tempted to buy some and eat them on your way home. Here on the table, next to the computer, you have a box with some of the snacks you would be facing in the supermarket.*



Participants were then asked to open the box with snacks and to leave it open while completing the next task. Each of the boxes contained an assortment of chocolate candies (e.g., Twix, Snickers, and M&Ms). After being presented with an example response "Close my eyes and leave that corridor as fast as possible," participants were asked to indicate as much strategies as possible to deal with the temptation situation during the next three minutes (each strategy was written in a separate space).

### **Dependent Measures**

First, we assessed participants' emotions before the seventh diet-day. With this measure we were interested in testing if indeed the anticipation of a future goal-relaxation moment would have an effect on emotions experienced (MacLeod and Conway 2005). Second, after having imagined completing the entire diet-week, participants responded to the manipulation check on how much they enjoyed the seventh diet-day, and next we assessed participants' self-regulatory ability, and their ability to imagine pursuing the diet. Third, after reading the scenario where they were asked to imagine being in the supermarket's snacks corridor, we measured participants' ability to develop different coping strategies in order to deal with the temptation situation, not congruent with their dieting goal.

*Manipulation Checks.* To assess if the seventh diet-day was perceived as a goal-relaxation period, participants were asked to indicate on a 7-point scale how much they enjoyed the seventh diet-day (not at all/very much). Furthermore, we also examined how easy it was to imagine pursuing the diet and to imagine having to lose the 9 kilos in two months (7 point scale; not easy at all/very easy).

*Coping.* The ability to develop coping strategies was measured by the number of different coping strategies elicited by each participant after reading the scenario and opening the box located next to the computer that contained an assortment of chocolate candies (e.g., Twix, Snickers, and M&Ms). The presentation of problems that need an immediate solution is a common procedure used in creativity studies, where the researchers want to assess consumers' ability to generate problem-focused coping (Aspinwall and Taylor 1997; Burroughs and Mick, 2004)

*Self-Regulation.* To measure self-regulation ability we used seven items from the short-version of State Self-Control Capacity Scale (Muraven et al. 2005) ( $\alpha = .80$ ; e.g., "I would feel drained"). After participants imagined completing the seventh diet-day, they were asked to imagine themselves initiating the second week of diet and to indicate how they would feel.

*Affect.* Since we were interested in assessing emotions directly related with the consumption experience, nine emotions from Richins' (1997) consumption emotions set were included (e.g., contented and irritated) and three from the PANAS (Watson, Clark and Tellegen 1988). After completing the menu choice of the sixth diet-day, participants were asked to indicate how much they would feel each emotion (7-point scale; not at all-very much). Emotions were grouped in positive ( $\alpha = .90$ ) and negative emotions ( $\alpha = .91$ ). An affect index was then calculated by subtracting the average of the negative emotions from the average of the positive emotions (Yeung and Wyer 2004).

## Results and Discussion

Analysis of the manipulation checks indicated, as expected, that participants in the *intermittent-striving* condition enjoyed the seventh diet-day much more than participants in the other condition ( $M_{\text{intermittent-striving}} = 5.93$ ,  $M_{\text{straight-striving}} = 3.69$ ,  $F(1, 57) = 50.33$ ,  $p < .001$ ), showing that this day was indeed perceived to be a goal-relaxation moment. Moreover, it was equally easy for participants in both conditions to imagine themselves pursuing the diet ( $M_{\text{intermittent-striving}} = 4.07$ ,  $M_{\text{straight-striving}} = 3.82$ ,  $F(1, 57) = .25$ ,  $n.s.$ ) and to imagine themselves having to lose 9 kilos during the upcoming two months ( $M_{\text{intermittent-striving}} = 3.47$ ,  $M_{\text{straight-striving}} = 2.69$ ,  $F(1, 57) = 2.86$ ,  $n.s.$ ).

An ANOVA on the number of coping strategies elicited to deal with temptation indicated that participants in the *intermittent goal-striving* condition developed a higher number of different coping strategies than participants in the straight-striving condition ( $F(1, 57) = 6.40$ ,  $p < .05$ ), supporting our hypothesis that participants in the intermittent goal-striving condition would show higher ability to develop coping strategies to ward off temptations. The act of overcoming temptations is a fundamental component of successful self-regulation (Baumeister et al., 1994) especially since temptations are many times considered to be ‘irresistible’ and driven by a strong urge to buy or consume something (Baumeister 2002). Thus, the higher the ability to generate alternative strategies to overcome a temptation that is potentially harmful to the overarching goal, the higher the ability to exert self-control.

Consistent with our hypothesis 1 and with findings from study 1 and study 2, participants in the *intermittent-striving* condition revealed higher self-regulatory ability, as

assessed by the state self-control capacity scale, than participants in the *straight-striving* condition ( $F(1, 57) = 4.35, p < .05$ ), indicating that goal-relaxation moments enhance consumers' ability to proceed with self-regulation (means are in table 3.1).

Furthermore, an ANOVA on the affect index indicated that participants in the *intermittent- striving* condition experienced indeed positive emotions with higher intensity than participants in the *straight-striving* condition ( $F(1, 57) = 5.21, p < .05$ ) supporting our proposition that the anticipation of future positive experiences (goal-relaxation moments) would enhance current well-being.

Overall, this study provides additional support that goal-relaxation moments contribute to higher ability to proceed with self-regulatory activities, showing that consumers' ability to develop coping strategies to deal with tempting situation is enhanced with intermittent-goal-striving processes. Moreover, it also stresses the impact that anticipation of future experiences may have on consumers' current experienced emotions and on self-regulatory ability.

Findings from this study add to results from study 1 and study 2, indicating that for self-regulatory behaviors that need to be exerted over extended periods of time (e.g., dieting), intermittent-striving processes may contribute to higher likelihood of goal attainment than straight-striving processes. Altogether, results from the three studies provided indication that in order to attain a desired end-state we do not need always to perform behaviors that bring it closer and that to behave bad in the short-run may be beneficial in the long-run.

## GENERAL DISCUSSION

Despite the common idea that deviant behaviors--those not congruent with the overarching goal--decrease the likelihood of final goal attainment, such behaviors may actually enhance the likelihood of goal attainment. Our research demonstrates that when planned goal relaxation moments are incorporated in goal-striving, levels of depletion are lower, consumers are more motivated to proceed towards the focal goal, and have a higher ability to develop coping strategies to deal with temptations, all of which are conducive to final goal attainment. These findings were consistent across tasks in which thoughts had to be suppressed (study 1), tasks to imagine oneself on a two-months diet (study 2), and tasks that simulated being on a diet (study 3), and across ability, motivation, and emotion measures, including measures of physical endurance and creativity. The consistency of the findings across multiple measures of self-regulation (time spent holding handgrips, anticipated depletion, and self-control capacity) demonstrates that goal-relaxation can contribute positively to self-regulatory resources management, and thereby enhances the likelihood of goal attainment.

The current findings contribute to the goal pursuit and self-regulation literatures in several ways. First, previous goal pursuit research has focused on strategies to keep behaviors congruent with current overarching goals (Gollwitzer 1999; Gollwitzer et al. 2004; Mischel 1996). Our results extend this approach by demonstrating that the engaging in temporarily goal deviating behaviors may also enhance the likelihood of long-term goal attainment, if goal deviation is part of the plan. Second, the findings show that besides self-regulatory resource level, other factors may influence the likelihood of goal attainment, in particular motivation, and coping ability. Third, the findings highlight the importance of persistence

versus flexibility in self-control. Clearly, continuous abstinence and inhibition of certain behaviors or products frequently leads to ‘irresistible urges’ and craving that are difficult to be restrained (Baumeister, 2002), which may lead to the breakdown of self-regulation and a snowballing to loss of control. The present findings indicate a straightforward technique for self-management. They show that it is important to plan moments in goal pursuit during which consumers can, under certain conditions ‘misbehave.’ Our findings indicate that this behavioral flexibility enhances the likelihood of final goal attainment.

The present research has implications for theories of goal-striving. We know that overly rigid goals can impair self-management (Baumeister et al. 1994) and flexibility in goal pursuit facilitates goal attainment (Kirschenbaum, Tomarken and Ordman 1982). Moreover, the belief that the only viable outcome for goal attainment is complete abstinence, is even a potential self-regulatory problem (Baumeister et al. 1994) because even harmless goal-deviations may be perceived as violations of the goal and can generate snowballing patterns. Our findings add to this by showing that in order to persuade and help individuals to attain their goals it is advantageous to incorporate planned goal-relaxation moments during goal-pursuit.

More research is needed to understand pattern of depletion of self-regulatory resources. Previous research has shown that expectancies about the consequences of self-control exertion, influence consumers’ depletion levels, independent of actual self-control exertion (Martijn et al. 2002). The fact that, in the present research, the anticipation of deviating activities had a positive impact on self-regulatory resources, provides additional support that self-regulatory resources rather than being fixed are "manageable" and smarter

than a muscle that gets depleted every time it is used. Identifying other factors that influence resource management, beyond planned relaxation, are thus of major importance.

Moreover, more research is needed on how consumers can improve self-regulation. A significant amount of research has been done on identifying self-control failures and circumstances under which failures are more prone to occur (Baumeister et al. 1994; Vohs and Baumeister 2004), but little is known on how to help consumers manage their resources and ability in order to enhance the likelihood of goal attainment. More focus is needed on the content of the plans consumers need to attain their overarching goals.

In sum, the present research contributes to a better understanding of self-regulatory behavior for goal attainment, emphasizing the importance of planning in goal-striving. While common sense suggests that consumers should never engage in behaviors detrimental for goal attainment, we show that goal-deviating behaviors can have a positive contribution for goal attainment. By helping self-regulatory resources' replenishment, increasing motivation and enhancing coping ability, goal-relaxation behaviors enhance likelihood of goal attainment. And, as stressed by Baumeister et al. (1994, 263) "anything that science (...) can do to reduce the painful and costly toll of self-regulation holds the fair promise of being a contribution to the greater good of humanity. " The present research sheds light on when it is good in the long-run to be bad in the short run. Put differently, and following Anacharsis, sometimes we need to be allowed to 'play' to continue working, and it is wise to plan for this.

## *Chapter 4*

### **Merry Impulsivity: Belief Systems about the Dark and Bright Sides of Being Bad Consumers.**

It is part of our narrow, individual rationality that makes us miss part of the fun others get out of life (Scitovsky 1992, 247)

Impulsive behaviors are generally considered to be negative behaviors that should be avoided at any cost (Baumeister 2002, Rook 1987). Despite constant reminders from various governmental and health-care organizations of performing the adequate and right goal-pursuit activities, consumers persistently seem to not pay attention to those alerts and to even consciously act on impulse (Baumeister et al. 1994). Why is that so? Most of the reasons proposed in the literature have identified as the main cause to act on impulse the experience of a sudden, powerful urge that leads consumers to engage in the immediate pleasurable



experience (Rook 1987), a desire that is outstripped by consumers willpower to exert control (Hoch and Loewenstein 1991, Vohs and Faber forthcoming). Thus, impulsive behavior is usually approached as a self-control failure, because for consumers to attain their higher priority goals, they need to resist the momentarily salient yet lower priority temptations with which the more important goals are in conflict (Fishbach and Shah 2006, Gollwitzer 1999).

However, one must take into consideration that consumers have an intricate goal-system (Kruglanski et al. 2002), with many goals concurring and competing for consumers' self-regulatory resources and means. Some goals can be conscious, resulting in a strong willingness to achieve something as, for example, the goal of saving money in order to buy the house that we want, while others can be more unconscious in the sense that consumers do not consciously strive for it, but which are equally present in consumers' goal-system, such as the goal of being happy or healthy. Moreover, one should also take into consideration that impulsive behaviors lead to immediate pleasurable experiences which may have a positive impact on consumers' well-being, even if just in the short-term. Therefore, we suggest that one of the reasons why consumers may persistently seem to fall into temptations with disregard for its long-term consequences might be due to the fact that consumers believe that they will benefit from desirable short-term and long-term outcomes by doing so. This would fuel consumers' willingness to act on impulse, extracting positive benefits from the act of embracing temptation, believing that impulsiveness contributes to high-order goals, such as to be happy and be social.

In this research we analyze consumers' beliefs about the consequences of acting on impulse and its impact on consumers' happiness/well-being. Personal beliefs have a significant influence on the way that consumers act and behave towards others (Bain et al.

2006). Indeed, beliefs have been shown to move consumers towards actions that they consider consistent with their beliefs (Jervis 2006), shaping consumers' perceptions of reality (Lederman, Lederman and Kully 2004). Since happiness is a major determinant of consumers' overall well-being, and researchers for long having been interested in identifying factors that can influence and heighten consumers' life satisfaction (DeNeve and Cooper 1998, Diener, Oishi and Lucas 2003, Ryan and Deci 2001), it seems of relevance to examine consumers' beliefs on the impact of behaving on impulse-a prevalent phenomenon, on consumers' happiness. Support for our prediction that impulsive behaviors are believed to contribute positively to a set of personal characteristics that positively influence consumers' happiness/well-being, could therefore help to understand why consumers so often experience what seems to be self-control breakdowns. If consumers believe that impulsive acts contribute positively to a set of desirable long-term outcomes, they may engage in those acts in an attempt to enhance their well-being.

A person is said to have high subjective well being if she or he experiences life satisfaction and frequent joy (Diener, Suh and Oishi 1997). Although impulsive behaviors may impair the likelihood of long-term (conscious) goals' attainment, they also contribute to the frequent experience of joy and satisfaction, which may strengthen the belief that impulsive behaviors build consumers' well-being. Interestingly, it has been shown that in the long run, after indulgence guilt is diminished, consumers often regret missing-out on the pleasures of life- both retrospectively and prospectively (Kivetz and Keinan 2006), pointing to a positive contribution of impulsivity/indulgence on consumers' happiness.

In addition, impulsive behaviors can also be associated with a set of personal characteristics that may enhance consumers' beliefs that impulsivity contributes positively to

their happiness. First, we suggest that low self-regulator consumers, being less focused in controlling their behaviors, are thought to experience less tension and stress as consumers that systematically try to refrain their short-term impulses in detriment of their long-term overarching goals. Second, the diminished regard for the long-term consequences of acting on impulse may be interpreted as a general optimism regarding the future, typically overlapping with consumers' well-being (DeNeve and Cooper 1998). So, we suggest that low self-regulator consumers are believed to have a more positive attitude towards life than high self-regulator consumers. Third, low self-regulator consumers may appear to be more prone to experience and to seek new experiences, developing better social skills than consumers who exert high self-control and who therefore avoid new situations that may interfere with their overarching goals. Altogether, we propose that impulsive behaviors may be related to a set of desirable personal and behavioral characteristics that may enhance the belief that impulsive behaviors positively influence consumers' happiness and that may therefore explain why consumers so often consciously engage in impulsive behaviors.

### **IMPULSIVE BEHAVIOR AND HAPPINESS**

Impulsive behavior occurs when consumers experience a sudden, often powerful and persistent urge to buy or to do something immediately, and engage in that behavior without thoroughly considering if the impulsive act is consistent with one's long-term goals (Baumeister 2002; Rook 1987). Most of the times the desire to consume acts as the main motivator to engage in the impulsive decisions (Hoch and Loewenstein 1991). Due to the fact that consumers are considered to disregard the consistency between the present impulsive act

and some of their long-term goals, impulsive behaviors are usually associated with consumers' lack of self-control (Baumeister et al. 1994; Faber and Vohs 2004), a behavior that should not have happened if consumers had had stronger willpower. This lack of self-control has been the object of research for a long time (Baumeister et al. 1994, Vohs and Baumeister 2004, Vohs and Faber forthcoming). Researchers have tried to assess factors and develop strategies that can positively contribute to self-control ability, in order to help consumers to increase their self-regulatory ability (Baumeister et al. 1994). For example, Gollwitzer (1999) proposed the formulation of implementation intentions that link anticipated critical situations to goal-directed responses as an effective strategy to keep focus on the current goal. Also the blocking of unwanted influences by directing one's implementation intentions toward the ongoing goal pursuit or directing one's implementation intentions towards the suppression of anticipated unwanted responses have been proposed as effective strategies to keep focus on the current goal and avoid temptations (Gollwitzer, Fujita and Oettingen 2004). In addition, distracting consumers' attention from temptations (Mischel 1996) or increasing consumer's motivation to attain their goals (Muraven and Slessareva 2003), have been proposed as appropriate strategies to increase likelihood of self-control exertion, thus enhancing the likelihood of goal attainment.

The main findings on the impulsivity issue suggest that the likelihood of acting on impulse results from a combination of situational variables (Beatty and Ferrel 1998), consumers' impulsivity trait (Rook 1987, Weinberg and Gottwald 1982), consumers' involvement with the product (Jones et al.2003), and the available self-regulatory resources (Vohs and Faber forthcoming). We add to this body of research by exploring the possibility that the likelihood of acting on impulse is also dependent on consumers' proneness and

perhaps willingness to engage in such kind of behaviors. If consumers believe that engaging in impulsive acts is positively correlated with various desirable personal characteristics, they may consciously engage in those acts in attempts to boost their well-being, even when enough self-regulatory resources are available to exert willpower. In addition, they may use these beliefs in hindsight to justify impulsive acts, both contributing to increased well-being. As stressed by Lederman et al. (2004, 130) “sometimes attitudes or beliefs slip into our unconscious mind without our ever realizing it, shaping our very perceptions of reality”, indicating the important role that beliefs can play in consumers’ behavior. Also, Baumeister and colleagues (1994) highlighted that through out research on self-control failures have been found “failures” to often involve active and conscious participation by consumers. We suggest then that this kind of behavior may not be a result of a self-defeating behavior, as proposed by many, but instead a conscious effort to attain/acquire a set of personal characteristics that consumers may believe are shared mostly by those that tend to not make much effort to control their behaviors and that act more in the “spur” of the moment.

Our main hypothesis is that impulsive consumers (from now on called low self-regulators) compared with non-impulsive consumers (from now on called high self-regulators), will be considered to be happier. This *Merry Impulsivity* hypothesis is based on three underlying processes that we will name here and discuss later. First, we expect that low self-regulators, compared with high self-regulators, are considered to experience higher positive affect and lower negative affect, typically approached as an indication of happiness (Ryan and Deci 2001). Second, we also expect low self-regulators to focus more on the short-term experiences and therefore to be considered to have a more positive attitude towards uncertainty of future events than high self-regulators, indicating a more general positive

attitude towards life, which positively influences consumers' subjective well-being/happiness (Diener et al. 1997; Scheier and Carver 1993). Third, we predict that low self-regulators will be considered to better develop social skills than high self-regulators and to more easily create and nurture interpersonal relationships, a basic human need essential for well-being/happiness (Ryan and Deci 2001).

Impulsive experiences are often considered to be accompanied by strong emotions or desire towards the object of consumption, with consumers' extracting hedonic fulfillment from their impulsive acts (Hirschman and Holbrook 1982). As an example, one of the participants in a study conducted by Rook (1987, p. 194) described the impulsive act as "the item you are sucked into stands out from the rest. As soon as you see it you stop walking and stare at it for a few minutes, then it suddenly strikes your head and gives you goose bumps" or "To hell with everything else. I want it and I am going to get it!" (p. 195). The strong emotions elicited by the impulsive object or act lead to decisions based more on affect rather than on cognitive evaluation (Shiv and Fedorikhin, 1999), with impulsive buyers often shopping for the stimulation, adventure, and the feeling of being in another world as a way of fulfilling their hedonic motives (Arnold and Reynolds 2003). To these shoppers, to act on impulse is something good and even desirable to fulfil their hedonic motives. Therefore, we expect low self-regulators to be considered to experience hedonic fulfillment from their impulsive acts, resulting in the belief that these consumers will experience high positive affect. Regarding high self-regulators, compared with low self-regulators, we expect them to be considered to more often experience negative affect and tension associated with the need to override their short-term immediate impulsives in order to exert self-control and to pursue overarching goals. Self-control implies effort to be able to prevent consumers from carrying

the strong and forbidden impulses (Muraven, Tice, and Baumeister 1998). Previous acts of self-control impair further self-control strength, requiring extra effort to be able to continue exerting self-control and to override short-term impulses (Muraven and Baumeister 2000). Thus, one would expect that during the process of exerting self-regulation consumers are expected to be more prone to experience bad mood or tension associated with the need to override the strong short-term impulses. We predict then,

**H1:** Compared with high self-regulators, low self-regulators will be considered to experience higher positive affect and lower negative affect, altogether positively contributing to the belief that, in the long-run, low self-regulators are happier than high self-regulators.

Since low self-regulators tend to give primacy to the short-term benefits of the immediate experience, disregarding the long-term consequences of the impulsive act we predict that compared with high self-regulators that need to keep focus on their long-term goals, low self-regulators will be perceived to have less concern regarding the outcomes of future events. In addition, we expect high self-regulators to be considered to have a strong desire for control in order to determine and prevent against factors that can undermine their self-control efforts. Moreover, we suggest that the disregard for (long-term) future events shown by low self-regulators are likely to be perceived as reflecting a positive attitude/ beliefs on future outcomes, contributing to the consumers' belief that low self-regulators have a general optimism towards life, with optimism playing an important role on consumers' well-being (DeNeve and Cooper 1998; Diener et al. 1997). Thus we hypothesize that,

**H2:** Compared with high self-regulators, low self-regulators will be considered to have a higher positive attitude/optimism towards life and lower desire for control, both of which are deemed to positively contribute, in the long-run, to happiness.

We also predict that consumers will share the belief that low self-regulators have better sociability skills than high self-regulators and more easily create interpersonal relationships. Since low self-regulators tend to prefer the short-term benefits of immediate pleasurable experiences, they will likely search for new sensations, excited by the unknown attraction. Therefore it is likely that this sensation-seeking tendency is also transferred to interpersonal relationships, resulting in consumers being extraverted, which tends to be positively related with well-being/happiness (Diener, Oishi and Lucas 2003). Moreover, the hypothesized positive attitude towards life and the tendency to experience positive affect can also heighten the ability to create and develop relationships. Regarding high self-regulators, we predict that the focus on overarching goals and the tendency to impair potential harmful responses to immediate pleasurable experiences will have a negative influence in their social skills. Also the hypothesized desire for control can weaken high self-regulators' desire to enlarge their set of relationships that would force them to deal with the uncertainty of the unknown, leading to the belief that high self-regulators are less social than low self-regulators. Altogether, we hypothesize that,

**H3:** Compared with high self-regulators, low self-regulators will be considered to be higher sensation seekers and to show higher sociability skills, both positively contributing to the belief that, in the long-run, low self-regulators are happier than high self-regulators.



In sum, most of the research conducted on the self-control topic implicitly assumes that if somehow consumers would be able to increase their self-regulatory ability, many social problems as obesity and impulsive behavior, would be solved, contributing to a “better world” (Baumeister 2002; Faber and Vohs 2004; Sayette 2004). The offer of self-help books, websites and courses, supposedly to help consumers to become better self-regulators, is soaring. And consumers are systematically confronted with numerous “reminders” of their ongoing pursuits. However, to our knowledge, there is no research on the believed bright side of impulsivity for consumers’ happiness. This is relevant if one considers that a significant percentage of consumers’ daily decisions appear to comprise impulsive decisions (Rook, 1987; Rook and Fisher, 1995; Hausman 2000). Impulsive purchases are considered to represent about 70% of the consumer decisions (Bellenger, Robertson and Hirschman 1978). Moreover, since 38 percent of the adults in an annual national survey responded affirmatively to the statement: “I am an impulse buyer” (Rook and Fisher 1995), makes such phenomenon even more interesting. Support for our predictions would offer a possible explanation why consumers pervasively tend to engage in impulsive acts. If consumers believe that impulsive acts contribute positively to a set of positive characteristics, they may engage in those acts in an attempt to enhance their well-being. Study 1 analyzes to what extent low self-regulators are considered to be happier and to experience more positive affect than high self-regulators.

Our predictions were tested in two studies. In the initial study, we tested to what extent impulsive consumers are considered to experience more positive affect than non-impulsive consumers. In study 2, using a representative sample of the Dutch population, we assessed participants’ lay beliefs concerning the characteristics of impulsive consumers, compared with non-impulsive consumers, including measures as sensation-seeking, positive

and negative affect, desire for control, social skills, hard-working, achievements in life, and happiness.

## **STUDY 1: LAY BELIEFS OF AFFECT EXPERIENCED BY LOW VERSUS HIGH SELF-REGULATORS**

### **Design and Procedure**

44 undergraduate students participated in this study in exchange for a monetary compensation (24 females and 20 males). The study was conducted with the objective of assessing lay beliefs concerning the perceived relation between low/high self-regulators and consumers' experience of affect, testing hypothesis 1 where we suggested that low self-regulators would be perceived/believed to experience higher positive affect and lower negative affect, positively contributing to happiness. Using a similar procedure to the one used by Kay and Jost (2003), this study had a two group-design and each group was exposed to a different scenario describing a person who is either a low or a high self-regulator. Participants in the *Low Self-Regulator* group read that "assume that you are about to meet someone. The only thing that you know about this person is that he/she is very impulsive." Participants in the *High Self-Regulator* group read "assume that you are about to meet someone. The only thing that you know about this person is that he/she is a high self-regulator." Next, participants indicated "How likely is it that this person possesses each of the following characteristics?" (1 = not likely at all, 7 = very likely). The list of characteristics consisted of the following 19 items: happy, contented, cheerful, satisfied, fulfilled,

unfulfilled, optimistic, pessimistic, sad, depressed, anxious, tense, humorous, social, friendly, helpful, unfriendly, selfish, and isolated.

## Results and Discussion

The main results are summarized in table 4.1. As expected, the low self-regulator target-person in comparison with the high self-regulator target person was considered to be significantly more happy ( $M_{\text{low}} = 5.73$ ,  $M_{\text{high}} = 3.82$ ,  $F(1,42) = 28.2$ ,  $p < .001$ ). In addition, an affect index was then calculated by subtracting the average of the negative emotions ( $\alpha = .79$ ; 9 items; e.g. pessimistic and unfriendly) from the average of the positive emotions ( $\alpha = .79$ ; 9 items; e.g., optimistic and social) (Yeung and Wyer 2004). An ANOVA on the affect index indicated that low self-regulators are considered to experience more positive affect than high self-regulators ( $F(1, 42) = 27.9$ ,  $p < .001$ ).

Next we tested for mediation, following Baron and Kenny's (1986) procedure. By doing so, we examined if the difference in happiness between the (beliefs about) the high and low self-regulators is indeed due to the assumed difference in the affect experienced by them. Findings indicated that the effect of the degree of self-regulation on happiness (condition coded as -1 for high self-regulators and 1 for low self-regulators;  $b_{\text{condition}} = .96$ ,  $p < .001$ ) was partially mediated by the intensity of the emotions experienced ( $b_{\text{affect index}} = .45$ ,  $p < .001$ ;  $b_{\text{condition}} = .49$ ,  $p < .05$ ; Sobel  $z = 3.01$ ,  $p < .01$ ). Altogether, the results supported hypothesis 1 that low self-regulators are considered to experience higher positive affect and lower negative affect than high self-regulators, positively contributing to happiness.

**Table 4.1.** Consumers' beliefs about the intensity of affect experienced by low and high self-regulators: Study 1.

Affect measures	Low Self-Regulator <i>N</i> = 22	High Self-Regulator <i>N</i> = 22	<i>F</i> (1,42)	
Positive Affect				
Cheerful	5.64	3.45	49.4	***
Optimistic	5.55	3.50	30.7	***
Humorous	5.41	3.18	41.9	***
Social	5.68	3.68	27.4	***
Friendly	5.50	4.27	16.6	***
Helpful	4.95	3.95	8.9	**
Satisfied	3.95	4.50	1.3	<i>n.s.</i>
Contented	4.27	4.31	.01	<i>n.s.</i>
Fulfilled	3.55	4.23	2.9	<i>n.s.</i>
Negative Affect				
Sad	2.91	3.68	4.0	*
Pessimistic	2.36	4.23	27.2	***
Isolated	2.64	4.45	16.5	***
Unfriendly	2.86	3.86	15.8	***
Depressed	2.86	3.59	3.2	<i>n.s.</i>
Anxious	3.45	3.73	.3	<i>n.s.</i>
Tense	4.05	4.50	1.1	<i>n.s.</i>
Unfulfilled	4.23	4.05	.1	<i>n.s.</i>
Selfish	4.00	4.73	3.2	<i>n.s.</i>
Affect Index	1.85	-.25	27.9	***
Happiness	5.73	3.82	28.2	***

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

An analysis for each emotion separately indicated that low self-regulators in comparison with high self-regulators are considered to be more cheerful, more optimistic, more humorous, more social, more friendly, and more helpful. In addition, the high self-

regulators are believed to be more sad, more pessimistic, more isolated, and more unfriendly than the low self-regulators.

Results supported then that low self-regulators are believed to experience positive affect with higher intensity and negative affect with less intensity than high-self regulators. Study 2 re-tests hypothesis 1 using a representative sample of the Dutch population. This study also includes measures for goal-pursuit achievements as achievements in life and hard-working constructs, as also assesses consumers beliefs in terms of sociability skills, sensation-seeking tendency, desire for control, and attitude towards life, in order to test the remaining hypotheses concerning the beliefs about the characteristics of low and high self-regulators. In addition, we examined the influence of consumers' actual impulsivity (self-assessed) on their beliefs about the dark and bright sides of impulsive consumer behavior.

## **STUDY 2: CONSUMERS' BELIEFS ABOUT PERSONAL CHARACTERISTICS OF LOW AND HIGH SELF-REGULATORS**

### **Design and Procedure**

438 randomly selected members of the CentER Data household panel of Tilburg University (mean age=51.1 years; female=212, male=226) participated in this study<sup>4</sup>. The experiment had a 2 (target-person: low vs. high self-regulator) × 2 (personality characteristic: impulsive vs. controlled) between-subjects design. Participants were randomly assigned to one of the *target-person* conditions, and divided in *impulsive* or *controlled* groups based on a

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<sup>4</sup>The authors acknowledge CentER Data from Tilburg University for supporting this study.

median-split of the consumers' impulsiveness scale (Puri 1996). Participants of this internet based panel, representative of the Dutch population, receive the questionnaires at home through internet or through a set-top box with which questionnaires can be completed using a television screen as a monitor, and they return the questionnaires through the web after completion.

This study followed a procedure similar to study 1. Each group (low vs high self-regulator) was exposed to a different scenario describing a person that is a low/high self-regulator. Participants in the *Low Self-Regulator* group read that "Please assume that you are about to meet someone. All you know about this person is that he/she is very impulsive. This person frequently experiences sudden, often powerful urges to consume or buy something immediately, frequently engaging in the pleasurable experiences."<sup>5</sup> Participants in the *Self-Regulator* group read that "Please assume that you are about to meet someone. All you know about this person is that he/she is a high self-regulator. This person usually resists the urges to buy or to immediately consume something, controlling his/her behavior in order to pursue high standards and long-term goals." Participants in both groups were then presented with a list of personal characteristics and asked to indicate on 7-point scales "Please indicate how likely it is, according to you, that this person possesses each of the following characteristics"

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<sup>5</sup> The scenarios in Dutch for the *low* and *high self-regulator* conditions were respectively, "Stel dat u iemand gaat ontmoeten. Het enige dat u weet over deze persoon is dat hij/zij erg impulsief is. De persoon ervaart regelmatig een plotselinge, vrij sterke drang om iets meteen te kopen of te consumeren, vanwege de onmiddellijke plezierige ervaringen daarvan.." and "Stel dat u iemand gaat ontmoeten. Het enige dat u weet over deze persoon is dat hij/zij zichzelf sterk controleert. De persoon weerstaat meestal de drang om iets meteen te kopen of te consumeren, om zo zijn/haar lange termijn doelen na te streven."

(not likely at all-very likely). Participants responded then to 19 items that measured happiness (“is happy” and is “joyful”,  $\rho = .65, p < .001$ ), sensation-seeking (“Enjoys getting into new situations where he/she can’t predict how things will turn out” and “He/she sometimes does “crazy” things just for fun”,  $\rho = .81, p < .001$ ), positive attitude towards life (“Has a “sunny” view of life” and “Has the positive view that everything has a solution and that things will be ok”,  $\rho = .73, p < .001$ ), sociability skills (“has many friends” and “is social”,  $\rho = .65, p < .001$ ), desire for control (“Gets irritated when unexpected situations occur” and “Has the need to control events around him/her”,  $\rho = .40, p < .001$ ), tension/negative affect (“Is distressed” and “Is prone to experience bad humour”,  $\rho = .59, p < .001$ ), positive affect (“is relaxed” and “is humorous”,  $\rho = .52, p < .001$ ), achievements in life (“is successful in his/her profession”, “Has or will have in the future many savings or material objects”, and “achieves much in life”,  $\alpha = .81$ ), and hard-working (“Is hard-working” and “Is ambitious”,  $\rho = .75, p < .001$ ). These last two constructs were included with the purpose of assessing beliefs about the target-person’s likelihood of goal-attainment. Indeed, taking into consideration that low self-regulators will tend to give primacy to short-term benefits of potential pleasurable experiences, this should be reflected in beliefs about a lower likelihood of long-term goal-attainment. Therefore, we included these measures of consumers’ persistence to perform tasks (“hard-working”) and consumers’ tendency to achieve materialistic values in life (“achievements in life”).

After rating the list of personal characteristics of the target person, participants responded to “how similar do you consider yourself to be to the person just described?” (7-point scales, not at all-very much) and “how close are you to this person?” (scale with two circles representing “other person” and “myself” that from 1 to 7 increased the level of

overlap; Aron, Aron and Smollan 1992). This measure ( $\rho = .68, p < .001$ ; 2 items) assessed the extent to which participants associated or disassociated themselves from the target-person in the scenario. These items were followed by items measuring the motivation to meet the target person (“How motivated are you to meet this person?” and “to what extent do you think it would be nice to meet this person?”, not at all-very much; 7-point scale;  $\rho = .71, p < .001$  ). Finally, participants read “now please indicate to what extent each of the following adjectives describes you” and completed the Consumer Impulsiveness Scale (Puri 1996; 12 items; Median = 2.71;  $M = 2.73, SD = .70, Max = 5.33, Min = .92, \alpha = .75$ ; 12 items; e.g. “self-controlled” and “easily tempted”). A median-split was then performed on this scale and participants were categorized as *impulsive* or *controlled*.

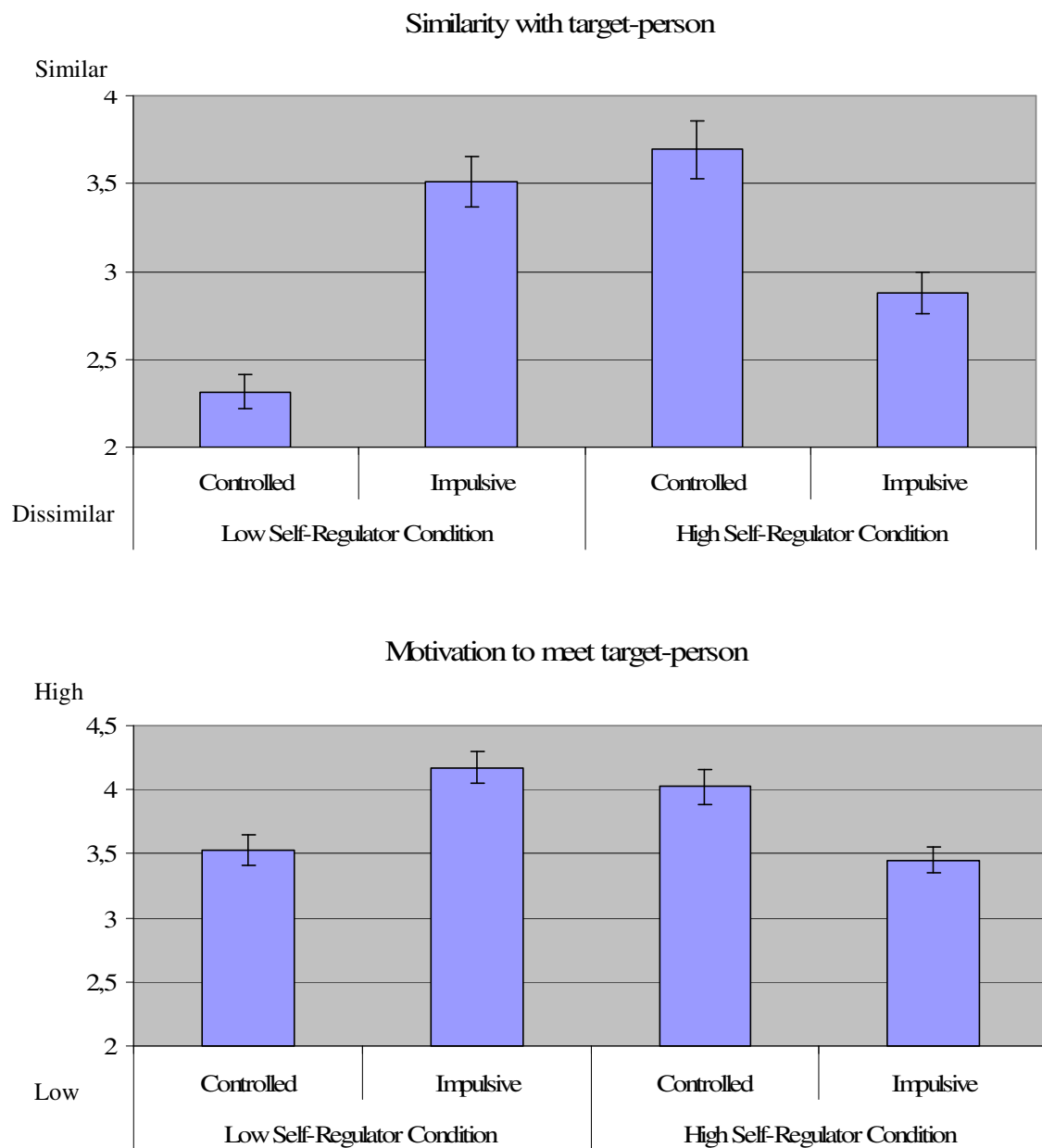
## Results and Discussion

To validate the efficacy of the scenario manipulation used, we examined first to what extent participants that indicated to be similar to the target-person were in fact classified accordingly through the median-split analysis. A significant interaction effect ( $F(1,434) = 10.78, p < .001$ ) indicated that actually *impulsive* consumers rated higher on the similarity measure in the *low self-regulator* condition than in the *high self-regulator* condition ( $M_{\text{impulsive, low}} = 3.51, M_{\text{impulsive, high}} = 2.87$ ), with the reversing occurring for the actually controlled participants ( $M_{\text{controlled, low}} = 2.31, M_{\text{controlled, high}} = 3.69$ ). This reveals the success of the manipulation and also provides converging evidence for the validity of the impulsiveness scale. Interestingly, the same pattern was found for the motivation to meet the target-person measure, with a significant interaction effect ( $F(1,434) = 26.42, p < .001$ ) suggesting that participants are more interested to meet target person the who are similar to them ( $M_{\text{imp, imp}} =$



4.17,  $M_{\text{self-regulator, self-regulator}} = 4.02$ ,  $M_{\text{imp, self-regulator}} = 3.53$ ,  $M_{\text{self-regulator, imp}} = 3.45$ ). These interactions are presented in figure 4.1.

**Figure 4.1.** Interaction Effects for *Similarity with Target-Person* and *Motivation to Meet the Target-Person* measures (standard error bars: mean  $\pm$  1 s.e.).



The remaining results are presented in table 4.2. The results for happiness replicated those from study 1, with a significant main effect for *target-person* indicating that participants shared the belief that low self-regulators are happier than high self-regulators ( $F(1,434) = 22.5, p < .001$ ).

In order to test our hypothesis 1, and in a similar vein to what was done in study 1, an affect index was calculated by subtracting the average of the negative emotions ( $\rho = .59$ ; 2 items) the average of the positive emotions ( $\rho = .52$ ; 2 items) (Yeung and Wyer 2004). An ANOVA on the affect index supported hypothesis 1, with a significant main effect for *target-person* condition indicating that low self-regulators are believed to experience more positive affect than high self-regulators ( $F(1,434) = 19.4, p < .001$ ). In addition, a significant interaction effect ( $F(1,434) = 6.2, p < .05$ ) revealed that participants' own personal characteristics (measured through the consumer impulsiveness scale) may influence consumers' beliefs on the intensity of the affect experienced by each of the *target-persons* described ( $M_{\text{low, impulsive}} = .49, M_{\text{low, controlled}} = .05, M_{\text{high, impulsive}} = -1.19, M_{\text{high, controlled}} = -.70$ ).

Furthermore, the analyses for positive attitude and desire for control showed main effects for the *target-person* consistent with hypothesis 2, showing that low self-regulators are believed to have a more positive attitude towards life and lower desire for control (positive attitude:  $F(1,434) = 113.5, p < .001$ ; desire for control:  $F(1,434) = 261.1, p < .001$ ). The other effects were not significant (all  $F$ s  $< 1$ ).

**Table 4.2.** Consumers' beliefs on personal characteristics differences between low and high self-regulators: Study 2.

Constructs	Impulsives		Controlled		Main Effect for target- person <i>F</i> (1,434)	Main Effect for CIS median split <i>F</i> (1,434)	Interaction Effect <i>F</i> (1,434)
	Low Self- Regulator <i>n</i> =87	High Self- Regulator <i>N</i> = 132	Low Self- Regulator <i>n</i> = 124	High Self- Regulator <i>n</i> = 95			
	Happiness	2.97	2.58	2.91			
Affect Index	.49	-1.19	.05	-.70	42.6 ***	.1 <i>n.s.</i>	6.2 *
Positive Attitude	4.81	3.45	4.72	3.55	113.5 ***	.1 <i>n.s.</i>	.4 <i>n.s.</i>
Desire for Control	3.90	5.60	3.91	5.62	261.1 ***	.1 <i>n.s.</i>	1.0 <i>n.s.</i>
Sociability skills	4.41	3.84	4.11	3.89	15.2 ***	.2 <i>n.s.</i>	.1 <i>n.s.</i>
Sensation-Seeking	5.08	2.29	5.12	2.45	507.4 ***	.6 <i>n.s.</i>	.7 <i>n.s.</i>
Hard-Working	4.11	5.45	4.06	5.48	214.5 ***	.1 <i>n.s.</i>	.2 <i>n.s.</i>
Achievements in Life	3.59	4.88	3.13	4.91	302.3 ***	6.0 *	7.5 **

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

In addition, the analyses for sensation seeking and sociability skills showed main effects for the *target-person* consistent with hypothesis 3, showing that consumers believe that low self-regulators are higher sensation-seekers ( $F(1,434) = 507.4, p < .001$ ) and have higher sociability skills ( $F(1,434) = 15.2, p < .001$ ) than high self-regulators, independently of their own impulsive personal characteristics (insignificant interaction effects, all  $F_s < 1$ ).

Regarding the hard-working and achievements in life measures, the main effects for the *target-person* condition indicated that participants shared the belief that low self-regulators score in the both measures less than high self-regulators (hard-working:  $F(1,434) = 214.5, p < .001$ ; achievements in life:  $F(1,434) = 302.3, p < .001$ ), revealing that low self-regulators are less likely to attain long-term goals. Interestingly, even so, impulsive consumers are considered to be happier than high self-regulators. A significant interaction effect was also found for the achievements in life measure ( $F(1,434) = 7.5, p < .01$ ) suggesting that participants' own personal characteristics may influence consumers' beliefs on the degree of achievements in life. Controlled consumers, compared with impulsive consumers, indicated that low self-regulators will attain less in life ( $M_{\text{low, impulsive}} = 3.59, M_{\text{low, controlled}} = 3.13, t(209) = -3.8, p < .001$ ).

With exception of the achievements in life measure and the affect index that showed a significant interaction effect, all other measures had no significant interaction effects supporting the generality of these beliefs about the consequences of impulsivity and their independence of consumers' own level of impulsivity.

In order to test for the mediating role of the measures assessed and happiness, as proposed in our hypotheses, the mediation analysis presented in table 4.3 was performed with two different regression models.

**Table 4.3.** Mediation Analysis of Consumers' Beliefs on Factors that Influence Happiness

	Beta	<i>p</i> -value
Model 1 <sup>a</sup>		
Target-person condition <sup>b</sup>	.22	***
Model 2 <sup>a</sup>		
Target-person condition <sup>b</sup>	-.09	<i>n.s.</i>
CIS Scale (CIS)	-.04	<i>n.s.</i>
Affect Index	.31	***
Positive Attitude	.24	***
Sociability Skills	.34	***
Desire for Control	-.02	<i>n.s.</i>
Sensation Seeking	-.05	<i>n.s.</i>
Hard Working	.02	<i>n.s.</i>
Achievements in Life	.15	**

Note: <sup>a</sup> R<sup>2</sup> are respectively for regression model 1 and 2, .05 and .55;

<sup>b</sup> Effect coded variable: -1 = High Self Regulator and 1 = Low Self-Regulator

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

In regression model 1, happiness was regressed on the *target-person* condition variable (low and high self-regulator condition coded respectively as 1 and -1), with results indicating a significant relationship between the *target person* condition and happiness (beta = .22,  $p < .001$ ). In regression model 2, in order to assess the potential mediation role of each measure, besides including the other seven measures measured, we have also included the consumer impulsiveness scale (continuous scale) in order to assess if participants' own assessment of their impulsive characteristics would play a significant role.

In support of the predictions, the *target-person* condition coefficient was not significant anymore in regression model 2 (beta =  $-.09$ , *n.s.*), but as predicted, the affect index (beta =  $.31$ ,  $p < .001$ ), the positive attitude towards life (beta =  $.24$ ,  $p < .001$ ), and the sociability skills (beta =  $.34$ ,  $p < .001$ ) were significant. In addition, also achievements in life influenced happiness (beta =  $.15$ ,  $p < .01$ ). All other measures were not significant (betas were respectively for CIS scale  $-.04$ , desire for control  $-.02$ , sensation-seeking  $-.05$ , and hard-working  $.02$ , all  $p$ 's  $> .20$ , *n.s.*). Altogether, these findings support the hypothesized mediation role that beliefs shared by consumers about low self-regulators' characteristics (as higher intensity on the experience of positive affect, positive attitude towards life and sociability skills) have on consumers' assessment of low/high self-regulators' happiness. In addition, a third regression model, that included all the independent variables of regression model 2 plus interaction terms of all the measures with consumer impulsiveness scale, was also performed. All interaction terms were insignificant, indicating that consumers' assessment of their own impulsive characteristics did not influence consumers' beliefs on the intensity of the measures shared among target-persons. This again demonstrates the generality of consumers' belief systems about the influence of impulsivity on happiness, through improved affect, positive attitude towards life and sociability skills, even while controlling for achievements in life.

Next, multivariate regressions were performed to disentangle differences between variables that would drive beliefs about "happiness" and "achievements in life", since these two variables seem to compete with each other. Low self-regulators are believed to be happier, but to have lower likelihood of achieving a lot in life, while high self-regulators are believed to be less happy, but with higher likelihood of achieving material goals. Multivariate

regressions were calculated with “happiness” and “achievements in life” measures as dependent variables (Breusch-Pagan test of independence:  $\chi^2(1) = 6.83, p < .01$ ) and remaining measures as independent variables. By using this method we obtain efficient estimates of the coefficients and standard error since the simultaneously estimation of both models account for the correlated error due to the fact that the models involve the same observations. Then, Wald tests were calculated in order to test for significant differences among coefficients of both models. Results are presented in table 4.4.

**Table 4.4.** Multivariate Regression: Measures that influence “Happiness” and “Achievements in Life”.

Constructs	Happiness ( $R^2 = .54$ )		Achievements in Life ( $R^2 = .68$ )		Wald Tests ( $H_0: \text{coeff}_{\text{happiness}} = \text{coeff}_{\text{achievement}}$ )	
	estimate <sup>a</sup>		estimate <sup>a</sup>			
Constant	1.19 (.23)	***	.52 (.32)	<i>n.s.</i>	3.37	<i>n.s.</i>
Condition <sup>b</sup>	.04 (.04)	<i>n.s.</i>	-.27 (.05)	***	24.8	***
CIS	-.03 (.04)	<i>n.s.</i>	.19 (.05)	***	14.7	***
Affect Index	.12 (.02)	***	.07 (.02)	**	3.2	<i>n.s.</i>
Positive Attitude	.13 (.03)	***	-.02 (.04)	<i>n.s.</i>	11.9	***
Sociability Skills	.25 (.03)	***	.19 (.04)	***	1.7	<i>n.s.</i>
Desire for Control	-.01 (.03)	<i>n.s.</i>	.07 (.04)	*	3.7	<i>n.s.</i>
Sensation Seeking	-.03 (.02)	<i>n.s.</i>	-.10 (.04)	**	3.2	<i>n.s.</i>
Hard Working	.06 (.03)	*	.51 (.04)	***	111.2	***

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

<sup>a</sup> Unstandardized coefficients; Standard errors are reported between parenthesis.

<sup>b</sup> Effect coded variable: -1 = High Self Regulator and 1 = Low Self-Regulator

Findings suggest that there are clear differences in the different measures contribution to “happiness” and “achievements in life”. Namely, the target person condition ( $F(1,429) = 24.8, p < .001$ ), consumers’ own assessment of impulsivity characteristics ( $F(1,429) = 14.7, p < .001$ ), the believed positive attitude towards life ( $F(1,429) = 11.9, p < .001$ ), and being hard-working ( $F(1,429) = 111.2, p < .001$ ). While the first two measures do not play a significant role in explaining happiness (both coefficients are insignificant,  $p > .29$ ), they seem to play a significant role explaining consumers’ beliefs about “achievements in life”. The target-persons’ impulsivity level has a negative impact on consumers beliefs about achievements in life while participants’ own impulsivity level influences positively beliefs about achievements in life.

In addition, also the coefficient for the “positive attitude towards life” measure differed significantly among regressions ( $F(1,429) = 11.9, p < .001$ ), playing a significant role explaining happiness ( $b = .13, p < .001$ ) but an insignificant role explaining achievements in life ( $p > .55$ ). Moreover, the hard-working measure also differed significantly on the degree to which influences each of the measures ( $F(1,429) = 111.2, p < .001$ ). Despite the significant coefficients in both regressions ( $b_{\text{happiness}} = .06, p < .05$ ;  $b_{\text{achiev\_life}} = .51, p < .001$ ), it seems to play a much more relevant role in explaining consumers’ beliefs about achievements in life than about happiness. In addition, taking into consideration those measures which coefficients do not differ significantly among regressions, and that present significant coefficients in both regressions, one must highlight the “affect\_index” measure ( $b_{\text{happiness}} = .12, p < .001$ ;  $b_{\text{achiev\_life}} = .07, p < .001$ ) and the “sociability skills” measure ( $b_{\text{happiness}} = .25, p < .001$ ;  $b_{\text{achiev\_life}} = .19, p < .001$ ), that seem to play a significant and similar role explaining both dependent variables. Therefore, although



happiness and achievements in life seem to compete at first glance with each other, because consumers seem to believe that low self-regulators achieve less in life but are happier than high self-regulators, and the reverse occurring for high self-regulators, the present analysis reveals that they are not completely independent measures. Indeed, these findings suggest that there is some “common ground”, as the experience of higher positive affect and less negative affect (here measured through the affect index) and sociability skills contributing significantly to happiness and life achievement.

In sum, findings from both studies suggest that there is a general belief that low self-regulators, despite achieving less in life, are happier consumers than high self-regulators. Results suggest that this might be due to the belief that those consumers that engage in impulsive behaviors share a set of characteristics that makes them to experience more happiness than self-regulators.

## **GENERAL DISCUSSION**

Despite the common idea that high self-regulatory ability heightens consumers’ well-being, impulsive behaviors may actually positively influence consumers’ well-being, due to consumers’ belief systems about the correlates of impulsivity. Our research demonstrates that consumers who tend to engage in immediate pleasurable experiences with disregard for its long-term consequences are generally believed to be happier, more social, with a more positive attitude towards life, and to experience higher positive affect than consumers who have high consumption/behavioral self-regulatory concerns. This suggests that the general belief that in order to be happy, consumers’ should regulate their behavior, refraining short-term impulses, might be, at least partially, a misconception, with consumers believing that

impulsivity influences positively the experience of happiness. Although recent findings from Tangney and colleagues (Tangney, Baumeister and Boone 2004) suggest that individuals that score high on self-control ability compared with those that score low on self-control tend to have higher grades, show less eating disorders, and have higher self-esteem, little has been done to understand the consequences of being a high self-regulator on the development of personal characteristics as sociability skills and attitude towards life. Moreover, the present research is to our knowledge the first to analyze consumers' belief systems on the consequences of acting on impulse. As highlighted by Furnham (1988) beliefs/lay theories shared by consumers can play a significant role in explaining the way consumers behave and decide. In addition, also Furnham and Cheng (2000) stressed the importance of understanding consumers' beliefs about the causes of happiness because it may relate to specific behavior aimed at increasing happiness. To the extent that the belief systems have documented influence on consumer behavior, or justify it post-hoc, they explain why consumers' impulsivity in the face of long-term goals persist, and may even prosper. This research sheds light on the kind of beliefs that consumers have regarding acting on impulse and to what extent this behavior is believed to influence the experience of happiness. As outlined by Baumeister and colleagues (Baumeister et al. 1994), the acquiescence phenomenon, in which supposed self-regulatory failures involve active participation by consumers, showing even willingness to perform that way, is a quite unexplored phenomenon in the self-regulatory literature, although of great importance. According to Baumeister et al. (1994, p. 248) "there is plenty of evidence that most cases of underregulation involve the clear and active acquiescence by the individual". We contribute then to this unexplored area of research, analyzing consumers' beliefs on the consequences of acting on impulse, indulging in the current immediate temptations, with disregard to its potential long-term consequences.

The present research adds to previous research on impulsive buying that has approached impulsive behavior as a negative behavior that should at any cost be avoided, suggesting that impulsive behaviors can also have a “bright side”. As stressed by Rook and Fisher (1995, p.311) “even impulsive buyers seem able to reject making an impulsive purchase when negative normative evaluations reach some critical level,” showing that the decision to act on impulse is not always really something taken on the “spur” of the moment but there is some kind of cognitive evaluation of the decision itself. Impulsive experiences are typically accompanied by a strong and very intense desire to own/possess immediately the object (Hoch and Loewenstein 1991; Rook 1987) and are described most of the times as a very intense hedonic experience. Therefore, in order to exert self-control, consumers not only need to be able to overcome the intensity of the emotions experienced, which will impair self-regulatory resources (Tice, Bratslavsky and Baumeister 2001), as also they need to have resources to then proceed with the self-regulatory activities. Altogether this seems to indicate the existence of an important trade-off between the affective component and the materialistic/goal component, with the resolution of this conflict leading to either impulsive or goal-consistent behavior. Impulsive behaviors are typically interpreted as goal-inconsistent, and thus with universal negative consequences. One should however take into consideration that consumers have an intricate goal-system, with multiple goals co-occurring and competing simultaneously (Kruglanski et al. 2002). Some goals may be conscious and task-oriented as, for example, the goal of losing a certain amount X of weight until the end of the Spring- that includes specific-task oriented strategies as dieting and exercising. While other goals might be more unconscious and less task-oriented as, for example, being happy- that is not comprised by a specific set of task-oriented strategies. Goals may also differ in their level of abstraction. While the example given in terms of weight loss has a very concrete

and measurable outcome (e.g. amount of kilos lost) the “I want to be happy” example does not, since one cannot accurately say that during the last 2 months has gained/lost 10 “units” of happiness. Therefore, although impulsive behaviors may apparently conflict with the more-task oriented and less abstract goals, as saving money or losing weight, consumers’ beliefs on the spillover effect that the decision of acting on impulse may bring in terms of their well-being may explain why consumers so often seem to “fail” acting on impulse. Therefore, our findings amend the so far universal belief that self-control is the ultimate goal to consumers’ well-being, with self-control being presented as the solution to many social problems (Baumeister et al. 1994; Vohs and Baumeister 2004). Our findings indicate that low self-regulators, compared with consumers that persistently try to self-regulate their behaviors in order to pursue long-term goals, despite achieving less in life, are believed to possess a set of characteristics that positively contribute to consumers’ happiness. This general belief that low self-regulators end up experiencing higher levels of happiness than self-regulator consumers may explain why often consumers persistently (e.g., smokers) engage in non self-regulatory activities.

One must however take into consideration that this research was conducted in a Western environment, and that beliefs about the *merry impulsivity* may differ among individuals of different cultures. Cultures differ in their shared values and these affect consumers’ attitudes, behaviors and beliefs (Schultz et al. 2005), with some studies indicating cultural differences on the way consumers self-regulate shame ( (Bagozzi, Verbeke and Gavino 2003) and use self-regulation strategies in achievement settings (Kurman 2001). More research is then needed to analyze possible differences on beliefs about the costs and

benefits of impulsivity among individuals of different cultures, since beliefs about self-control depend heavily on cultural factors (Baumeister et al. 1994).

In sum, the present research contributes to a better understanding of consumers' beliefs concerning the consequences of acting on impulse, highlighting how impulsivity may contribute to a set of personal characteristics that positively influence consumers' happiness/well-being, presenting a "bright side" of indulging in the immediate and often irresistible temptations.

## *Chapter 5*

### **Conclusions and Directions for Future Research**

“The capacity to alter and control oneself is one of the most powerfully adaptive and, indeed, miraculous aspects of human psyche. Anything that science, therapy, public policy, or individual human beings can do to enhance it- and thereby reduce the painful and costly toll of self-regulation failures- holds the fair premise of being a contribution to the greater good of humanity”

Baumeister et al. (1994, 263)

This thesis dealt with a relevant problem, analyzing how consumers’ beliefs about the appropriate actions to engage in can influence consumers’ ability and willingness to exert self-regulation. The study of situations that impair self-regulation, or in other words, that impair consumers’ ability to override immediate short-term impulses that could undermine long-term goal pursuit is of great relevance for consumer research (Baumeister et al. 1994,

Vohs and Baumeister 2004). Previous research has identified factors that impair consumers' ability to exert control. Egotistical illusions (Baumeister, Heatherton and Tice 1993), mortality salience (Ferraro, Shiv and Bettman 2005), ability to assess self-regulatory conflicts and to move towards their goals (Kruglanski et al. 2000), feelings of being "out of control" (Loewenstein 1996), lack of motivation (Muraven and Slessareva 2003), emotional distress (Heatherton, Striepe and Wittenberg, 1998; Tice et al. 2001), conflict between affective reactions and cognition (Shiv and Fedorikhin 1999), and previous exertion of self-control (Baumeister et al., 1998; Muraven et al. 1998; Muraven, Collins and Nienhaus 2002; Schmeichel, Vohs and Baumeister 2003; Vohs and Faber forthcoming) are some of the factors that have been identified to impair self-regulatory responses. This dissertation adds to this by analyzing beliefs that consumers may have regarding the appropriate strategies to deal with specific self-regulatory demands and examining to what extent are these beliefs indeed contributing to consumers' better ability to exert self-regulation.

## **Research Projects and Main Findings**

The general objective of this dissertation was to contribute to a better understanding of self-regulation phenomenon, showing that consumers' beliefs on how to deal and react to self-regulatory demands can have strong influence on consumers' self-regulatory effectiveness. An overview of the empirical chapters in this dissertation is presented in table 5.1.

**Table 5.1.** Overview of Empirical Chapters

	Chapter 2 <i>Sneaky Small Sins</i>	Chapter 3 <i>When Behaving Badly is Good</i>	Chapter 4 <i>Merry Impulsivity</i>
Object of Research	To understand how the offering of products in different package sizes may affect consumption self-regulatory behavior.	To address how goal-striving can be managed over time to maximize the likelihood of long-term goal attainment.	To examine consumers' beliefs on the consequences of acting on impulse and its impact on consumers' happiness/well-being.
Questioned Belief	That small packages are helpful in exerting self-control	That consumers continuously need to perform behaviors that bring the desired end-state closer in order to eventually attain the goal.	That impulsive behaviors are considered to be negative behaviors, that should at any cost be avoided.
Methodology	Experiments	Experiments	Experiment and survey
Sample type and size	Study 1a: students; 59 Study 1b: students; 40 Study 2: students; 104	Study 1a: students; 58 Study 1b: students; 75 Study 2: students; 77 Study 3: students; 59	Study 1: students; 44 Study 2: members of CentER data household panel (representative of Dutch Population); 438
Data Analysis	Content Analysis; Chi-Square Analysis; ANOVAs, TOBIT regression analysis.	ANOVAs and Mediation Analysis.	ANOVAs, Mediation Analysis, Multivariate Regressions.
Key Findings	Results indicate that despite the common idea that smaller packages are better self-regulatory tools than large packages, smaller packages do actually boomerang, enhancing the likelihood that consumption is initiated, and leading to higher quantities consumed than large packages do.	Results demonstrates that when planned goal relaxation moments are incorporated in goal-striving, levels of depletion are lower, consumers are more motivated to proceed towards the focal goal, and have a higher ability to develop coping strategies to deal with temptations, all of which are conducive to final goal attainment.	Results indicate that low self-regulators are believed to be happier, more social, with a more positive attitude towards life, and to experience higher positive affect than consumers that have high consumption/behavioral self-regulatory concerns, eventually explaining why consumers persistently seem to consciously "fail" in exerting self-control.



Underlying all the empirical chapters is the notion that consumers' beliefs play an important role determining strategies and behaviors that consumers may consider acceptable to engage in (Bain et al. 2006). The findings from Chapter 2 showed that despite the common belief shared by consumers (and apparently also by practitioners) that small package sizes are helpful tools to self-regulate consumption of tempting products, large package sizes revealed to be better self-regulatory tools. Such a finding has the potential to make a theoretical contribution to the self-control literature as well a contribution to the public policy and obesity area, highlighting how sneaky small packages sizes can be. The underlying psychological mechanism to explain the results is that large package sizes, compared with small packages sizes, are more likely to activate a self-control conflict and preventive self-control strategies to deal with it. Without such control conflict, consumers will not try to resist the temptation and may simply be motivated to indulge in it (Baumeister et al., 1994, Fishbach and Shah 2006). Study 1, which comprised two separate experiments, analyzed consumers' beliefs about the consumption of tempting products in different package sizes. Results were consistent across both experiments revealing that consumers seem to believe that small package sizes will help them to better self-regulate consumption of tempting products than large package sizes. Study 2 assessed real consumption behavior, analyzing the likelihood of opening packages and actual consumption. Results fully supported hypotheses, with participants that had been primed for self-regulatory concerns showing higher likelihood of opening the small packages than the large packages, as also consuming more from the small than from the large packages. Therefore, the general idea that small package sizes are better self-regulatory tools was challenged, with findings demonstrating that small package sizes turn out to be sneaky small sins. This chapter highlighted a situation in which external

factors influence consumers' self-regulatory ability, something quite new for self-regulation topic. Indeed, the self-regulation phenomenon has been basically approached as being dependent on consumers' willpower and consumers' available self-regulatory resources, always in tune with the strength model (Baumeister et al. 1998; Hoch and Loewenstein 1991). This research adds to it by showing that independently of consumers' willpower or self-regulatory resources, external factors as the offer of tempting products in small package sizes can undermine consumers' ability to exert self-control. More research is then needed in order to identify other external situations that may interfere with consumers' self-regulatory performance.

In chapter 3, the findings showed that despite the common belief that activities that are incongruent with overarching goals should be avoided, goal-deviating behaviors can contribute positively to goal-attainment likelihood. Focusing on goals for which consumers need to engage in inhibitory behaviors over extended periods of time, this chapter addressed an important and, interestingly, quite understudied phenomenon: the one of managing self-regulatory pursuits in order to increase consumers' persistence to attain their goals. Findings from three studies revealed that goal-deviating behaviors, when planned, can be strategic in order to cope with future regulatory challenges and to contribute positively to long-term goal attainment. Study 1, which comprised two separate experiments, used an established behavioral measure of self-regulation- the amount of time that participants spent holding a handgrip, testing to what extent the inclusion of goal-relaxation moments would enhance consumers' self-regulatory ability. Results were consistent in both experiments, showing that intermittent goal pursuits, in which goal-deviating activities are *a priori* included lead to less strain of self-regulatory resources than straight-striving processes, even in tasks of a few

minutes only. Study 2, using a scenario methodology, indicated that participants predict to be more motivated, less depleted, and to more likely attain their goals when pursuing self-regulatory processes that entail goal-relaxation moments, compared with straight-striving pursuits. Finally, study 3 provided additional support for the importance of including goal-relaxation moments in goal pursuit processes. Using a role-playing experiment where participants simulated being on a diet for one week, results showed that intermittent goal-striving processes enhanced consumers' ability to develop coping strategies to deal with tempting situations. Altogether, findings from the three studies highlighted the importance of goal pursuits' management and how self-control flexibility can increase consumers' ability to attain their long-term goals. During the process of goal-striving, consumers have multiple goals co-occurring simultaneously (Kruglanski et al. 2002), with goals differing in their level of abstraction and consciousness. While consumers may really wish to lose a certain amount of weight, they can also have other goals in their goal-system that directly compete to the former one, as for example, the one of going every weekend to the restaurant with friends. If a balance is not created in the striving-process for different competing goals, consumers may have the tendency to quit pursuing some of their goals, typically the ones that involve higher persistence and sacrifice. Consumers need therefore to manage their goal-pursuit activities in order to create the right balance between them, overcoming eventual depletion situations caused by persistent pursuit of withdraw tasks as, for example, is the case of dieting.

Chapter 4 examined consumers' beliefs on the consequences of acting on impulse and its impact on consumers' happiness/well-being. Findings showed that despite the common approach to impulsive behavior as a negative behavior that will be latter on regretted by consumers (Baumeister 2002, Rook 1987), consumers' believe that those that tend to engage

in immediate pleasurable experiences with disregard for its long-term consequences are happier, more social, with a more positive attitude towards life and to experience higher positive affect than consumers that have high self-control. Findings from study 1 showed that consumers who frequently engage in impulsive behaviors are considered to more likely experience positive affect than consumers that typically try to refrain impulses in order to pursue overarching goals. In addition, findings from study 2, which used a representative sample, showed that impulsive behaviors, despite leading to fewer achievements in life, are considered to contribute to a set of personal characteristics that raise consumers' happiness. This chapter addressed an understudied aspect of self-regulation failure: the one of consumers willingly failing to exert self-control. Indeed, this general belief that impulsive behaviors contribute to a set of desirable characteristics suggests that consumers may engage in those acts in an attempt to enhance their well-being. As outlined by Baumeister and colleagues (1994), the phenomenon of acquiescence with failure may explain a significant portion of self-control failures. To our knowledge, this chapter was the first to address empirically this phenomenon, shedding some light on belief systems that are conducive to consumers persistently engaging in non self-regulatory activities.

### **Directions for Future Research**

Self-regulation is a complex phenomenon, influenced by several consumers' characteristics and situational characteristics. It has been typically approached as a TOTE (test-operate-test-exit) system, in which standards are defined and where monitoring and adjustment plays a significant role (Carver 2004; Schmeichel and Baumeister 2004). A common metaphor that is used to explain self-regulation is an air conditioning mechanism

(Pieters 1993). A temperature is set (the goal) and a mechanism is activated that systematically is checking the temperature from the room until it reached the desired temperature. The same would happen in terms of self-regulation, always leading to successful exertion of self-control if consumers would have been programmed as machines. Alas, that is not the case. As individuals, we have a wide variety of “noise” that doesn’t allow us to perform as efficiently as an air conditioning. The emotions experienced, the personal motivation, personality characteristics, self-willpower, previous exertion of self-control skills, are just some of the potential noises that can affect consumers’ self-regulatory ability. Another relevant and until now quite understudied noise is the influence of consumers’ beliefs on consumers’ self-regulatory ability. The chapters in this dissertation provided new insights into the self-regulation phenomenon, highlighting some of the reasons that may lead consumers to have consumption breakdowns. However, much more can be done to better understand this complex phenomenon that affect the way consumers live and interact with others. In this section, I provide some additional directions for future research on self-regulation.

As a first potential research avenue I suggest the study of the impact of others on consumers’ self-regulatory pursuits. Common sense suggests that the support of others during consumers’ self-regulatory crusade might be of great help, with consumers having the tendency to often join support groups where participants face similar self-regulatory challenges. Consumers frequently tend to engage in self-regulatory pursuits only when someone else close to them engages in the same challenge. It is quite often reported that a “couple” is on a diet, or that “best friends” are trying to stop smoking, pointing out to the apparent belief that “together we are stronger than alone”. However, this need to engage in

self-regulatory pursuits accompanied by others with the same desired end-goal, can also lead to self-reference behaviors based on others' behaviors that may eventually undermine consumers' own self-regulatory behavior. In case of failure in exerting self-regulation by one of the members of the reference group, this may lead to unconscious acceptance of the failure situation based on the argument that "he/she also did it", thus that failure is a norm and acceptable. Therefore, if one of the "others" fails in his/her attempt to exert self-regulation this has the potential to create a snowballing effect generating support and potential excuses for the self also to fail, indicating that in terms of self-regulation consumers may be better off alone than "together".

Second, following the research presented in chapter 2 it also seems relevant to examine other potential external situations that may affect consumers' ability to exert self-regulation. Chapter 2 analyzed the potential negative impact of offering tempting products in small package sizes, highlighting the influence that external stimuli can have on consumers' self-regulatory ability. The identification of other factors that may influence consumers' self-regulatory ability, beyond offering products in different package sizes, is thus of major importance. As an example, it could be of interest to the public policy and obesity area to examine the impact of the recent inclusion of "healthy meals" by fast-food chains on consumers' self-regulatory ability. The inclusion of such healthy snacks may have negative consequences on consumers' self-regulatory ability since it becomes "acceptable" to frequent such fast-food chains, exposing consumers to a set of many other tempting products that may be difficult to resist to. By creating marketing mechanisms that deviate consumers' attention from the main goal-conflict, consumers may be tempted to consume products that in case the goal-conflict had been activated they would have not even included in their set of

alternatives. One cannot forget that if behaviors do not produce a self-regulatory conflict, consumers will not activate self-regulatory strategies that could restrain and avoid temptations (Fishbach and Shah 2006). The identification of any situation that manipulates consumers' judgment regarding the appropriateness of specific behaviors and leads to consumers' misconceptions on the outcome of those behaviors is thus of crucial importance. Only by doing so, consumers will be able to enhance their self-regulatory ability and to avoid consumption breakdowns.

In sum, this thesis studied situations that undermine consumers' self-regulatory ability (chapter 1), proposed strategies that may increase consumers' persistence to attain their long-term goals (chapter 2), and examined consumers' beliefs about the consequences and benefits of acting on impulsive (chapter 3). Altogether, this thesis aimed to shed some light into the self-regulation phenomenon, contributing to a better understanding of why consumers so often seem to embrace temptations.

## Appendix A. Literature Overview on Self-Regulation and Goal-Pursuit

Author(s), Year & Journal	Object of Research	Propositions & Hypothesis	Methodology	Main Findings/ Conclusions
Baumeister, Bratslavsky, Muraven and Tice, 1998, <i>Journal of Personality and Social Psychology</i>	To show that different acts of self-control draw on the same limited resource.	<ul style="list-style-type: none"> <li>The executive function of the self has a dimension of strength.</li> <li>An exertion of this strength in self-control draws on this strength and temporarily exhausts it.</li> </ul>	<p><b>Study 1:</b> Three groups-design (no-food, chocolate cookies, radishes); N=67; <b>Method:</b> Taste food (in other stimuli present) + unsolvable puzzle (DV: persistence).</p> <p><b>Study 2:</b> Three groups-design (speech choice: no, yes, control); N=39; <b>Method:</b> Speech video + self-regulatory measure + unsolvable puzzle (DV: persistence).</p> <p><b>Study 3:</b> 2(emotion suppression: yes, no) * 2(emotions valence: funny video, sad video); N=30; <b>Method:</b> Video+ self-regulatory measure (ability to solve anagrams).</p> <p><b>Study 4:</b> 2 (ego-depletion, no depletion) * 2(quit condition: active, passive); N=84; <b>Method:</b> Regulatory depletion task (cross letter e) + boring video (DV: time spent watching).</p>	<ul style="list-style-type: none"> <li><b>S1:</b> Resisting temptations seems to have produced a psychic cost, in the sense that afterwards participants were more inclined to give up easily in the face of frustration.</li> <li><b>S2:</b> Results suggested that acts of choice draw on the same limited resource used for self-control.</li> <li><b>S3:</b> Acts of self-regulation were followed by poorer performance at solving anagrams.</li> <li><b>S4:</b> Depleted people favor the passive option suggesting that are more prone to continue doing what is easiest, as if carried along by inertia.</li> <li>Research points toward a broad pattern of ego depletion. An initial act of volition was followed by a decrement in some other sphere of volition.</li> </ul>
Gollwitzer, 1999, <i>American Psychologist</i> .	To study role of implementation intentions (when and where to implement a goal related activity) on goal-directed responses	n.a. Review of existent studies	n.a. Review of existent studies.	<ul style="list-style-type: none"> <li>Goals or resolutions stand a better chance of being realized when they are furnished with implementation intentions that link anticipated suitable opportunities to intended goal-directed behavior.</li> <li>Once people have formed implementation intentions, goal-directed behavior will be triggered automatically when the specific situation is encountered.</li> <li>Obtained automaticity helps people to effectively meet their goals in the face of problems with initiating goal-directed actions, tempting distractions, bad habits, and competing goals.</li> </ul>



## Appendix A. –Continued

Author(s), Year & Journal	Object of Research	Propositions & Hypothesis	Methodology	Main Findings
Gollwitzer and Brandstätter, 1997, <i>Journal of Personality and Social Psychology</i> .	To study the impact that implementation intentions (“I intend to do y when situation z is encountered”) have on goal-directed behavior	<ul style="list-style-type: none"> <li>• Goal intentions that are furnished with implementation intentions will show a higher rate of completion than will bare goal intentions.</li> <li>• Implementation intentions delegate the control of goal-directed behaviors to the specified situational contexts</li> </ul>	<p><b>Study 1:</b> Two-groups design (implementation intentions: yes, no); N=111; <b>Method:</b> Listing goals for Christmas break + implementation intentions assessment + (4 weeks later) project completion assessment.</p> <p><b>Study 2:</b> Two-groups design (implementation intentions: yes, no); N=86; <b>Method:</b> Goal of writing report during Christmas holidays + implementation intentions specification (when and where) + (4 weeks later) project completion assessment.</p> <p><b>Study 3:</b> Three-groups design (implementation intentions, control I, control II); N=60; <b>Method:</b> Goal intention of taking a convincing counterposition against xenophobic statements): Video + mark main points + counterposition statements.</p>	<ul style="list-style-type: none"> <li>• <b>S1:</b> When people furnish difficult personal projects with implementation intentions, the rate of goal completion increases.</li> <li>• <b>S2:</b> When goal intention was furnished with implementation intentions, completion rate increased from 32% (no i.i.) to 71% (with i.i.), suggesting that the completion of goal intentions is promoted by implementation intentions.</li> <li>• <b>S3:</b> Participants seized suitable opportunities for expressing themselves more immediately when they had formed implementation intentions, that is, when they had mentally linked these critical situations to respective counterarguments.</li> <li>• The formation of implementation intentions qualifies as a self-regulatory strategy of goal striving.</li> </ul>
Gollwitzer, Fujita and Oettingen, 2004, in <i>Handbook of Self-Regulation</i> .	To study how can implementation intentions be used to facilitate implementation of goals	<ul style="list-style-type: none"> <li>• Implementation intentions can be used to suppress anticipated unwanted responses, controlling for potential hampering responses.</li> <li>• By directing one’s implementation intentions toward spelling out the wanted ongoing goal pursuit, the blocking of all kinds of unwanted influences will occur.</li> </ul>	<ul style="list-style-type: none"> <li>• n.a. Review of existent studies .</li> </ul>	<ul style="list-style-type: none"> <li>• The ignore-implementation intentions help participants to ward off the distractions, regardless of whether the motivation to perform the tedious task was low or high.</li> <li>• Implementation intentions that spell out how to perform the task at hand were effective in protecting the individual from the negative effects associated with the induced detrimental self-states.</li> </ul>

## Appendix A. –Continued

Author(s), Year & Journal	Object of Research	Propositions & Hypothesis	Methodology	Main Findings
Hoch and Loewenstein, 1991, <i>Journal of Consumer Research</i> .	To offer an economic-psychological model that seeks to integrate the rational and emotional forces influencing consumer self-control.	<ul style="list-style-type: none"> <li>• Self-control is a struggle between two psychological forces: desire and willpower.</li> <li>• Identification of two classes of self-control strategies:               <ol style="list-style-type: none"> <li>a) Those that attempt to directly reduce desire.</li> <li>b) Those that seek to overcome desire through a variety of willpower tactics.</li> </ol> </li> </ul>	n.a. Theoretical paper.	<ul style="list-style-type: none"> <li>• Identification of <i>desire reduction strategies</i>- the ones that reduce desire by undoing reference-point shifts: avoidance, postponement and distraction, substitution.</li> <li>• Identification of <i>willpower strategies</i>- the ones that people can use to overcome, rather than to reduce, their own impatience: pre-commitment, economic cost assessment, time binding, bundling of costs, higher authority, regret and guilt.</li> </ul>
Kirschenbaum, Tomarken and Ordman, 1982, <i>Journal of Personality and Social Psychology</i>	To clarify the mechanisms by which plans of varying specificity affect adult self-control.	<ul style="list-style-type: none"> <li>• Explicitly providing meaningful choices would enhance the benefits of moderated and highly specific planning.</li> </ul>	<b>Study 1:</b> 2 (choice, lost choice)*2 (Planning: Moderately, highly); N=150; <b>Method:</b> Choice manipulation + lecture on planning strategies+ planning execution (daily vs monthly).	<ul style="list-style-type: none"> <li>• Moderately specific planning regiment revealed to be superior than highly specific planning regimen.</li> </ul>
Martijn et al., 2002, <i>Social Cognition</i> .	To examine if expectations about self-control and its consequences determine how people perform on demanding tasks.	<ul style="list-style-type: none"> <li>• Expectancies about self-control influence performance on tasks that require such control.</li> <li>• Do people perform less on subsequent control tasks as a result of the schema that self-control is highly energy consuming, or because of a genuine lack of energy?</li> </ul>	<p><b>Study 1:</b> Three groups-design (No suppression, suppression, suppression + expectancy challenge); N=53; <b>Method:</b> Self-regulatory pre-measure + emotion suppression+ self-regulatory post-measure (handgrip).</p> <p><b>Study 2:</b> Questionnaire with 10 items intended to tap “self-control as energy” and 10 items to tap “self-control as a state of mind”.</p>	<ul style="list-style-type: none"> <li>• <b>S1:</b> The ego-depletion phenomenon was eliminated, and even reversed, when participants were told that controlling your emotions does not affect your physical performance in a negative way.</li> <li>• <b>S2:</b> Findings imply that the most prominent theory is that self-control is primarily a matter of energy. Although, the view of self-control as a state of mind is also endorsed.</li> <li>• Self-control is not a matter of energy alone, with expectancies also playing a role..</li> </ul>

## Appendix A. –Continued

Author(s), Year & Journal	Object of Research	Propositions & Hypothesis	Methodology	Main Findings
Mischel, 1996, in <i>The Psychology of Action: Linking Cognition and Motivation to Behavior</i> .	To analyze the ability to effectively delay gratification for the sake of better but delayed outcomes that one has chosen to pursue but that prove difficult to attain in the face of immediately available smaller rewards and temptations.	<ul style="list-style-type: none"> <li>How does attention to the rewards affect the young child's ability to wait for them?</li> </ul>	<ul style="list-style-type: none"> <li>n.a. Review of existent studies</li> </ul>	<ul style="list-style-type: none"> <li>In the delay-of-gratification situation, the problem of “willpower” should become easier when attention is diverted from the anticipated rewards to distracting stimuli, thus reducing the frustrative arousal that otherwise occurs and makes further waiting too aversive.</li> </ul>
Mukhopadhyay and Johar, 2005, <i>Journal of Consumer Research</i> .	To examine role of consumers' lay theories of self-control in goal setting and attainment	<ul style="list-style-type: none"> <li>Individuals who believe that people have malleable and unlimited self-control (unlimited-malleable theorists) are likely to set more goals than those who do not believe this to be the case (limited-malleable theorists as well as fixed theorists).</li> <li>Belief in unlimited and malleable self-control among individuals high (vs low) in self-efficacy is likely to result in the highest number of goals.</li> </ul>	<p><b>Study 1:</b> 2 (limited, unlimited)*2 (malleable, unmalleable); N=85; <b>Method:</b> Lay theory manipulation + resolutions listing (DV)</p> <p><b>Study 2:</b> 2 (limited, unlimited)*2 (malleable, unmalleable)* 2 (goal-setting order); N=130; <b>Method:</b> Lay theory questionnaire + consumption goals listing)* order-reversed</p> <p><b>Study 3:</b> 2 (malleable-limited, malleable-unlimited)* 2(self-efficacy: high vs low) <b>Method:</b> Lay theory manipulation + New Year's resolutions (DV) + Self-efficacy measurement</p>	<ul style="list-style-type: none"> <li><b>S1:</b> Unlimited-malleable participants set higher number of goals.</li> <li><b>S2:</b> Expectancies of success made limited theorists set more resolutions than unlimited theorists.</li> <li><b>S3:</b> Self-efficacy played no significant role on goal-setting</li> <li><b>S3:</b> Unlimited-malleable theorists high in self-efficacy, succeeded in a high number of goals.</li> <li>Provides empirical support for the link between lay-theories of limits to self-control and one's own goal-directed behavior.</li> </ul>

## Appendix A. –Continued

Author(s), Year & Journal	Object of Research	Propositions & Hypothesis	Methodology	Main Findings
Muraven, Collins and Nienhaus, 2002, <i>Psychology of Addictive Behaviors</i> .	To test self-control strength model in an addictive domain.	<ul style="list-style-type: none"> <li>Individuals whose self-control strength is depleted will consume more alcohol than individuals who were not depleted.</li> </ul>	<b>Study 1:</b> 2 (Alcohol consumption suppression: 3 h, 24 h) * 2 (depletion task: yes, no); N=58; <b>Method:</b> Alcohol intake suppression + suppressing thoughts or solving arithmetic problems + taste-rating task (DV: quantity of alcohol consumed)	<ul style="list-style-type: none"> <li><b>S1:</b> Individuals whose self-control strength was depleted through the prior exertion of self-control consumed more alcohol in a situation that demanded restraint.</li> </ul> <p>Findings were consistent with a limited-strength model of self-control.</p>
Muraven and Slessareva, 2003, <i>Personality and Social Psychology Bulletin</i> .	To understand if individuals can compensate for a loss of self-control strength, providing insights into the nature of self-control strength.	<ul style="list-style-type: none"> <li>If depleted individuals can compensate for the loss of self-control resources, then giving them an incentive to exert self-control should lead to better performance.</li> </ul>	<p><b>Study 1:</b> 2 (Thought suppression, memory condition)* 2(motivation: yes, no); N=43; <b>Method:</b> Depletion manipulation + unsolvable puzzles (DV: persistence)</p> <p><b>Study 2:</b> 2 (self-control, no self-control)* 2(motivation: yes, no); N=82; <b>Method:</b> Self-control task + frustrating game (DV: persistence)</p> <p><b>Study 3:</b> 2 (self-control, no self-control)* 2(motivation: high, low); N=82; <b>Method:</b> Control manipulation+ self-regulatory measure (# ounces drunk of a bad-tasting beverage)..</p>	<ul style="list-style-type: none"> <li><b>S1:</b> Individuals who were depleted but were given an incentive performed better than individuals who were depleted and were not given an incentive.</li> <li><b>S2:</b> Depleted participants who believed that practicing the self-control task was worthless performed more poorly than depleted participants who believed the task could be beneficial.</li> <li><b>S3:</b> If depleted participants were not given a sufficient incentive to exert self-control, they performed more poorly than non-depleted participants.</li> </ul> <p>The incentives for exerting self-control and level of self-control strength jointly determine the amount of self-control exerted subsequently.</p>

## Appendix A. –Continued

Author(s), Year & Journal	Object of Research	Propositions & Hypothesis	Methodology	Main Findings
Muraven, Tice and Baumeister, 1998, <i>Journal of Personality and Social Psychology</i> .	To test the hypothesis of regulatory depletion: when people engage in self-regulation, they should show subsequent decrements on other tasks that might require self-regulation.	<ul style="list-style-type: none"> <li>Self-control exertion will be followed by a period of diminished capacity.</li> </ul>	<p><b>Study 1:</b> Three groups-design (Emotional response: increase, decrease, control); N=60. <b>Method:</b> Self-regulatory pre-measure (handgrip) + emotion manipulation (videotaped on a study of facial expression)+ self-regulatory post-measure (handgrip)</p> <p><b>Study 2:</b> Three groups-design (thoughts suppression, thoughts expression, no thought control); N=58; <b>Method:</b> Thoughts manipulation + self-regulatory measure (persistence at unsolvable anagrams)</p> <p><b>Study 3:</b> Two groups-design (math problems, suppress thoughts); N=49; <b>Method:</b> Control manipulation)+ self-regulatory measure (ability to not show emotions)</p> <p><b>Study 4:</b> within-subjects design (success and failure), N=86; <b>Method:</b> Autobiographical stories (success and failure), followed by content analysis of failure/ success reasons</p>	<ul style="list-style-type: none"> <li><b>S1:</b> Either trying to amplify or stifle one's emotional response led to an absolute reduction in physical endurance (self-control measure).</li> <li><b>S2:</b> Participants who had suppressed their thoughts subsequently quit working much sooner on a frustrating task, compared with participants from the other two groups.</li> <li><b>S3:</b> Participants in the suppress thoughts condition were rated as less able to control their emotional expression.</li> <li><b>S4:</b> Effort was linked to success in self-regulation, but no-effect for the emotions control and failure.</li> </ul> <p>Findings support predictions that after people exercise self-control, they are subsequently less capable of regulating themselves, at least for a short time.</p>
Tice, Bratslavsky and Baumeister, 2001, <i>Journal of Personality and Social Psychology</i> .	To understand the causes of impulse failure suggesting that might be due to a tendency to give primacy to affect regulation.	<ul style="list-style-type: none"> <li>Distress shifts people towards favoring the immediate pleasure.</li> <li>Affect regulation (to relieve acute distress) overrides impulse control.</li> </ul>	<p><b>Study 1:</b> 2 (distress, happy)*2 (mood-freezing manipulation: yes, no); N=74; <b>Method:</b> Emotion manipulation + Mood-freeze manipulation +Taste test (DV: pretzels, chocolate chip cookies, and small cheese).</p> <p><b>Study 2:</b> 2 (distress, happy)*2 (mood-freezing manipulation: yes, no); N=47; <b>Method:</b> Emotion manipulation + Mood-freeze manipulation +Game to maximize profits from a pool of resources (delay of gratification measure).</p> <p><b>Study 3:</b> 2(good mood, bad mood) * 2(mood-freezing manipulation: yes, no)* 2(distractors: fun, boring); N=90; <b>Method:</b> DV: amount of time participants procrastinated before taking an important test.</p>	<ul style="list-style-type: none"> <li><b>S1:</b> Emotional distress led people to increase their consumption of snack foods. This pattern was eliminated and even reversed when people were told that their moods would not change during the experiment.</li> <li><b>S2:</b> When participants were led to believe that their moods would not be changeable, they delayed gratification more effectively.</li> <li><b>S3:</b> Procrastination was highest when people were in a bad mood, when they believed that their mood could be changed, and when the alternative (procrastinating) option appeared to be highly enjoyable.</li> <li>Emotional distress leads to various breakdowns of impulse control. Effects vanished when people were led to believe that these impulsive acts would not lead to mood improvement (because the moods were frozen).</li> </ul>

## Appendix A. –Continued

Author(s), Year & Journal	Object of Research	Propositions & Hypothesis	Methodology	Main Findings
Vohs and Faber (Forthcoming), <i>Journal of Consumer Research</i> .	To examine if factors that lead to the depletion of self-regulatory resources may help explaining when and why specific episodes of impulse buying will occur.	<ul style="list-style-type: none"> <li>• Previous use of regulatory resources in an initial self-control task will leave people less able to resist the impulse to buy.</li> </ul>	<p><b>Study 1:</b> Two groups-design (Videotape: no control, attention control); N=35; <b>Method:</b> Videotape session + marketing study (willingness to pay measure)</p> <p><b>Study 2:</b> Two groups-design (Thought suppression: no, yes); N=70; <b>Method:</b> Thoughts suppression task + Buying behavior in bookstore.</p> <p><b>Study 3:</b> 2(Self-control exertion: no, yes) * 2(Impulsive, non impulsive); N=40; <b>Method:</b> BIS + Reading task + Buying behavior in grocery shopping study.</p>	<ul style="list-style-type: none"> <li>• <b>S1:</b> Participants who had controlled their attention were willing to pay, on average, more than other participants.</li> <li>• <b>S2:</b> Participants who were in the regulatory resource condition bought more items than other participants.</li> <li>• <b>S3:</b> Participants who typically have tendencies to buy on impulse consumed and were depleted, consumed more than participants on other three conditions</li> <li>• Self-regulatory resource availability, together with consumers' impulsiveness characteristics, are important elements to determine when and why people engage in impulsive buying.</li> </ul>

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## **Nederlandse Samenvatting**

Elk jaar beginnen miljoenen mensen aan een dieet zonder het uiteindelijke doel te bereiken, terwijl de Wereld Gezondheids Organisatie het aantal volwassenen met overgewicht wereldwijd op meer dan 1 biljoen schat. Een vergelijkbaar patroon is waarneembaar bij het doel geld te sparen, daar financiële problemen aangegeven worden als een van de hoofdoorzaken van misdaad in de Verenigde Staten. De moeite die consumenten blijkbaar hebben met hun zelfbeheersing teneinde overkoepelende lange-termijn doelen te verwezenlijken, heeft geleid tot een toenemend belang van het zelfreguleringsthema en van de identificatie van factoren, die het vermogen tot zelfbeheersing van consumenten ondermijnen en die een averechtse werking hebben bij de maatschappelijke betrokkenheid van consumenten. Dit proefschrift draagt bij aan de huidige onderzoeken naar de ogenschijnlijk goed onderbouwde overtuigingen van consumenten over het passende gedrag om zelfregulering uit te oefenen en over de kosten en baten van het uitoefenen van zelfregulering welke invloed kunnen hebben op het vermogen en de bereidheid van de consument om deze uit te oefenen.

Zelfregulering is een complex proces dat volharding, kracht, motivatie, en betrokkenheid van de consument vergt, teneinde korte termijn impulsen te weerstaan. Om de

lange termijn doelen na te kunnen streven, moeten consumenten zich onthouden van direct aangename ervaringen die nadelig zijn voor het bereiken van hun overkoepelende doelstellingen. Hoewel dit soms betekent dat men weerstand moet bieden aan eenvoudige en kleine verleidingen, is het niet altijd gemakkelijk, aangezien het lokmiddel van verleidingen doordringend is (Fishbach and Shah 2006). Bovendien is het bewezen dat consumenten een beperkte capaciteit hebben voor zelfregulering (Muraven, Tice and Baumeister 1998), wat de moeilijkheid versterkt die consumenten kunnen hebben bij het weerstaan van zelfs zeer kleine verleidingen die doelachtervolging op lange termijn ondermijnen.

Bovendien moet men in overweging nemen, dat het vertrouwen in het al dan niet bereiken van het beoogde doel van een bepaalde actie, (Boonzaier, McClure and Sutton 2005) en het vertrouwen in de mate waarin iemand bepaalde taken uit kan voeren (Eccles and Wigfield 2002; Malle and Knobe 1997), invloed kunnen hebben op de manier waarop consumenten handelen en acties plannen om hun doel te bereiken. Zoals geschetst door Baumeister en collega's (Baumeister, Heatherton and Tice 1994) wordt het falen van zelfregulering vaak niet veroorzaakt door uitdroging van de bronnen van zelfregulering van de consument, maar door de pogingen van de consument om op een ineffectieve en averechtse wijze zelfregulering uit te oefenen. Hoewel consumenten denken dat zij zelfregulering uitoefenen, kunnen misopvattingen over de effectiviteit van het gedrag bijdragen aan foutieve gedragsregulering resulterend in het mislukken van zelfcontrole. Interessant is dat, zoals reeds benadrukt door Boonzaier et al. (2005), wanneer enkele van de schijnbaar vanzelfsprekende ingevingen/opvattingen empirisch getest worden, zij vaak verkeerd blijken te zijn en niet leiden tot het gewenste en verwachte resultaat.

Het lijkt dan van belang om de juistheid te onderzoeken van enkele opvattingen die consumenten delen over het gewenste gedrag om zelfregulering uit te oefenen, en te analyseren in welke mate deze daadwerkelijk bijdragen aan de verhoging van het vermogen van de consument om zelfregulering uit te oefenen. Dat is het doel van dit proefschrift. Ten grondslag aan alle empirische hoofdstukken ligt de veronderstelling dat de opvattingen van de consument een belangrijke rol spelen bij het bepalen van strategieën en gedragingen die consumenten acceptabel achten (Bain et al. 2006).

Het eerste empirische hoofdstuk - *Sneaky Small Sins*-, zet een vraagteken bij de gevestigde opvatting dat consumenten beter in staat zijn om zelfregulering toe te passen op verleidelijke producten, zoals chocolade of chips, als deze worden aangeboden in kleine verpakkingen. Interessant is dat bevindingen aangetoond hebben dat, ondanks de algemene opvatting welke gedeeld worden door consumenten (en blijkbaar ook door vaklieden) kleine verpakkingen nuttige hulpmiddelen zijn om de consumptie van verleidelijke producten zelf te reguleren, de grote verpakkingen betere hulpmiddelen bleken te zijn tot zelfregulering. Een dergelijke bevinding heeft de potentie een theoretische bijdrage te leveren aan de vakliteratuur inzake zelfcontrole als aan het openbaar beleid op het gebied van obesitas, er de nadruk opleggend hoe verraderlijk kleine verpakkingen kunnen zijn. Het werkelijke psychologische mechanisme om de resultaten te verklaren is dat grote verpakkingen, vergeleken met kleine verpakkingen, het zelfreguleringconflict en preventieve strategieën ter zelfcontrole om ermee om te gaan, eerder zullen activeren. Zonder een dergelijk controle conflict, zullen consumenten niet proberen om de verleiding te weerstaan en kunnen zij eenvoudigweg bewogen worden om zich hieraan te buiten te gaan (Baumeister et al., 1994, Fishbach and Shah 2006).

Dit hoofdstuk legde de nadruk op een situatie waarin externe factoren de zelfregulerende capaciteit van de consument beïnvloeden, een vrij nieuw gegeven op het gebied van zelfregulering. Sterker nog, het fenomeen zelfregulering is hoofdzakelijk benaderd als zijnde afhankelijk van de wilskracht van de consument en de beschikbare middelen van de consument tot zelfregulering, altijd in lijn met het krachtmodel (Baumeister et al. 1998; Hoch and Loewenstein 1991). Dit hoofdstuk voegt daaraan toe dat, door te laten zien dat onafhankelijk van de wilskracht en de bronnen tot zelfregulering van de consument, externe factoren, zoals het aanbieden van verleidelijke producten in kleine verpakkingen, het vermogen tot zelfcontrole van de consument kunnen ondermijnen.

Het tweede empirische hoofdstuk - *When Behaving Badly is Good*- voegt literatuur over het najagen van doelen en over zelfregulering samen, en bestrijdt de algemene opvatting dat activiteiten die niet in overeenstemming zijn met een gesteld doel moeten worden vermeden. De bevindingen lieten zien dat ondanks de algemene opvatting dat activiteiten die niet gericht zijn op het behalen van gestelde doelen vermeden moeten worden, en dat niet-doelgericht gedrag in alle waarschijnlijkheid wel positief kan bijdragen tot het behalen van een doel. Met de focus op die doelen waar consumenten onbelemmerd gedrag dienen te tonen over een aanzienlijke periode, behandelde dit hoofdstuk een belangrijk en vreemd genoeg enigszins onderbelicht fenomeen; dat van het hanteren van zelfregulerende doelen, teneinde de volharding van consumenten te vergroten bij het bereiken van deze. Resultaten van drie onderzoeken tonen aan dat niet- doelgerichte gedragingen, wanneer gepland, strategisch kunnen zijn teneinde toekomstige beproevingen aan te kunnen en een positieve bijdrage te leveren aan het bereiken van lange termijn doelen, hierbij het belang benadrukkend van 'goal

*pursuits managements*’ en hoe ‘*self control flexibility*’ het vermogen van consumenten vergroot om hun lange termijn doelen te bereiken.

Het laatste empirische hoofdstuk – *The Merry Impulsivity* – analyseert de gedachtegang van consumenten met betrekking tot de gevolgen van het systematisch reageren op impulsen en de impact welke deze heeft op het geluksgevoel van consumenten, betwistend dat het aangenomen feit dat impulsief gedrag ten allen tijde algeheel slecht is en ten koste van alles vermeden dient te worden.

Bevindingen toonden aan dat, ondanks de gebruikelijke benadering dat impulsief gedrag als negatief moet worden beschouwd en later wordt betreurd (Baumeister 2002; Rook 1987), consumenten ervan uitgaan dat degenen die geneigd zijn om toe te geven aan korte termijn geneugten en daarbij de gevolgen op lange termijn negeren, gelukkiger en socialer zijn, met een positievere levenshouding en een sterkere positieve beleving dan consumenten met een goede zelfbeheersing.

Dit hoofdstuk richtte zich op een weinig onderzocht aspect van het mislukken van zelfbeheersing: dat van het opzettelijk laten mislukken van de uitoefening van zelfbeheersing. De algemene opvatting dat impulsief gedrag bijdraagt aan een wenselijke toestand, wekt inderdaad de indruk dat consumenten zich een bepaald gedrag aanmeten om hun gevoel van welbehagen te vergroten. Zoals benadrukt door Baumeister and colleagues (1994), kan het berusten in mislukking een aanzienlijk aandeel hebben in het falen van zelfbeheersing. Bij ons weten, was dit hoofdstuk het eerste om dit verschijnsel empirisch te benaderen, daarbij aandacht bestedend aan geloofssystemen die bevorderlijk zijn voor de volharding van consumenten in ‘*non self-regulatory activities*’.

In het geheel genomen, bestudeerde dit proefschrift de situaties die het vermogen tot zelfregulering van consumenten ondermijnen (hoofdstuk 1), droeg het strategieën aan die de volharding van consumenten kunnen vergroten om hun lange termijn doelen te bereiken (hoofdstuk 2) en onderzocht het de opvattingen van consumenten over de gevolgen en de voordelen van impulsief gedrag (hoofdstuk 3). Samenvattend, was het doel van dit proefschrift om het verschijnsel van zelfregulering enigszins te belichten, en daarbij beter te leren begrijpen waarom consumenten zo vaak aan verleidingen toegeven.