

License to Sin
A Justification-Based Account of Self-Regulation Failure

Jessie C. de Witt Huberts

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**License to Sin:
A Justification-Based Account of Self-Regulation Failure**

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(met een samenvatting in het Nederlands)

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Jessica Cathelijne de Witt Huberts
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Promotor: Prof. dr. D.T.D. de Ridder
Co-promotor: Dr. C. Evers

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Chapter I:

General Introduction

Alarmingly high prevalence rates of obesity, cardiovascular diseases, diabetes, financial debt and divorce are what we have to show for our life of plenty. In a world where abundance has replaced scarcity as the source of many contemporary societal problems, the question why people so often fail to act in accordance with their objectives, values and intentions has become more relevant than ever. Despite their best intentions not to, dieters overeat, smokers continue to smoke, consumers overspend, and partners break their vows. To explain this puzzling phenomenon, self-regulation failure is often explained in terms of not being able to resist the lure of immediate temptations, resulting in impulsive behavior taking over our rational considerations. As captured by common descriptions of self-regulation failure, it is generally assumed that dieters *succumb* to tempting cupcakes, smokers *give in* to nicotine cravings, consumers *cave in* to the special offer, and we *fall for* someone else's charms. In line with this widespread view, psychological research investigating the causes of self-regulation failure has mainly focused on impulsive determinants of self-regulation failure. However, self-regulation failure does not necessarily entail losing control over oneself. Consider for example the ex-smoker. By reasoning that New Year's Eve is an exception, he accepts an offered cigarette. Likewise, on account of having had a bad day at work, the girl justifies spending her savings on yet another pair of shoes, and the infamous phrase "Just one won't hurt" has marked the start of many lapses. It thus seems that people often fail to follow through on their long-term goals not because of lack of willpower or being overwhelmed by impulse, but rather because they generate reasons for giving in to temptations. As such, rather than lose self-control, people sometimes relent their self-regulation efforts by relying on justifications to allow themselves a forbidden pleasure.

However, despite the familiar appeal it has for most of us, justification processes have been afforded surprisingly little attention as an explanation for self-regulation failure. In this dissertation we aim to address this gap by examining the role of justification processes in self-regulation failure, thereby exploring deeper the observation that self-regulation failure is not always the consequence of impulsive factors, but can result from more reasoned processes as well.

An elaborate outline of the theoretical framework and the available empirical evidence for justification processes in self-regulation failure can be found in Chapter 2. However, to put the aims and outline of this dissertation in context, we will sketch a brief introduction of the topic here.

When motivations clash

At the heart of self-regulation lies the ability to transcend immediate temptations in the service of long-term goals. As such, self-regulation dilemmas typically involve a conflict between incompatible motivations, where on the one hand hedonic attraction pulls towards indulgence, while on the other hand rational

norms with concern to the conflicting goal dictate to resist the hedonic urge (e.g., Fujita, 2011; Hofmann, Friese, & Strack, 2009). For example, the girl who is being offered a chocolate cake will experience a motivational conflict between her desire to enjoy the tasty treat and her wish to fit in her favorite dress again. Successful self-regulation would entail sacrificing the opportunity to taste the chocolate cake in favor of her wish to reach a desired weight. Self-regulation failure on the other hand, would imply giving up her distal goal of weight-loss in favor of the immediate pleasure the chocolate cake will bring. Contributing to the difficulty of effective self-regulation is that most conflicts have a temporal dimension, with indulgence leading to immediate and tangible pleasure, whereas the benefits resulting from resisting the temptation are often delayed and abstract.

The conflict between opposing motivational forces that encompass a self-regulatory dilemma is not new, but has captured the imagination of scholars for centuries, often describing the conflict in epic terms; as a conflict between the passions and reason; heart and mind; or emotions versus rationality. This duality is still evident in contemporary conceptualizations of self-regulation, such as the hot versus cool systems (Metcalf & Mischel, 1999), visceral versus rational decision making (Loewenstein, 1996), and impulsive versus reflective systems (Hofmann, Friese, Strack, 2009).

Drawing on the dual-process and dual-system theories that have dominated research in social psychology the past two decades (e.g., Evans, 2008; Smith & DeCoster, 2000), these models contend that self-regulation is determined by two systems, a hot, impulsive, and emotional system and a cold, reflective, and rational system. Although the models differ in their specific contentions, in general they assume that tempting stimuli elicit automatic affective reactions in the impulsive system that, unless counteracted by more deliberative processes stemming from the reflective system, will lead to self-regulation failure.

Importantly, whereas impulsive processes are assumed to operate in an effortless manner (e.g., Strack & Deutsch, 2004), in order to act in accordance with one's self-regulation goals and shield those goals against interfering impulsive influences, the reflective system requires cognitive and motivational resources (e.g., Evans, 2008; Fujita & Han, 2009; Hofmann, Friese, & Roefs, 2009; Hofmann, Rauch, & Gawronski, 2007; Vohs, 2006). As a result, if there is not sufficient cognitive and motivational capacity available, processes in the reflective system will be undermined, allowing for impulsive reactions to dictate behavior.

In line with these assumptions, the past two decades research on self-regulation has documented how impairments of the reflective system result in self-regulation failure. For example, research on resource-depletion suggests that the ability to effectively self-regulate relies on a limited resource that is depleted by effortful attempts at self-regulation. Consequently, prior acts of self-control will deplete self-regulatory resources and undermine subsequent attempts at self-

regulation (Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000). Such states of resource-depletion caused by an initial act of self-control (e.g., resisting to eat cookies) have been linked to overeating (Vohs & Heatherton, 2000), impulsive spending (Vohs & Faber, 2007) and excessive alcohol consumption (Muraven, Collins, & Neinhaus, 2002).

Beyond self-control resources, operations in the reflective system also rely on sufficient cognitive capacity. Situational factors burdening our cognitive capabilities, such as cognitive load (e.g., Boon, Stroebe, Schut, & IJntema, 2002; Shiv & Feodorikhin, 1999; Ward & Mann, 2000), emotional distress (Macht, 2008; McKee et al., 2010; Sinha, 2008; Witkiewitz & Villaroel, 2009), and alcohol intoxication (e.g., Easdon & Vogel-Sprott, 2000; Hofmann & Friese, 2008), as well as dispositional differences in cognitive capacity, such as working memory capacity (Hofmann, Gschwender, Friese, Wiers, & Schmitt, 2008; Whitney, Hinson, & Jameson, 2006), increase the likelihood of self-regulation failure.

Conversely, by explaining self-regulation failure as resulting from the impairment of the reflective system, these models assume that when the reflective system has sufficient capacity or resources, people will make a reasoned and rational decision and act in line with their objectives and self-interests. This assumption is based on the rational ideal where reasoning and deliberation transcend our feelings and impulses, and rationality is assumed to be the end-product of reasoning and logical thought. However, this rationalist framework has been called into question in other areas of psychology. In domains such as judgment and decision making investigators have become increasingly aware of the limits of reasoning (e.g., Mercier & Sperber, 2011; Shafir, Simonson, & Tversky, 1993; Simon, 1990, 1992).

A growing body of research suggests that violations of rationality are not only accounted for by the cognitive constraints of decision makers (e.g., Simon, 1990, 1992), but has also revealed that even at full capacity processes in the reflective system are prone to bias. In sharp contrast to the classical view that reasoning about possible options and weighing up their pros and cons is the most reliable way to arrive at sound decisions, a whole line of research argues that the best decisions are made in split seconds (cf. Dijksterhuis & Nordgren, 2006), and emotions are crucial for effective decision making (e.g., Damasio, 1994). Sometimes reasoning can even lead to poor decisions or outcomes not in line with our objectives and self-interests, with studies reporting that compared to spontaneous decisions, encouraging participants to deliberate and analyze their reasons before making a decision reduced the quality of that decision, both in terms of objective utility (e.g., Wilson & Schooler, 1991), as well as subjective satisfaction (e.g., Wilson et al., 1993). Moreover, the view of humans as ideal rational creatures has been challenged by findings indicating that reasoning in itself tends to be guided by our motivations and desires and that judgement can be

biased by our preferences (e.g., Hsee, 1995; Kunda, 1990; Mercier & Sperber, 2011), suggesting that our impulses often dictate our reasoning rather than vice versa.

Yet, while in other domains it is increasingly acknowledged that the impact of reasoning on judgment is often mediated through emotional and motivational mechanisms, to date this notion has been largely ignored in both the self-regulation literature and in dual-process theories. In other words, while dual-process models of self-regulation generally assume that the purpose of the reflective system is to constrain hedonic tendencies coming from the impulsive system, such a conceptualization fails to take into account that reasoning itself is vulnerable to our motivations and desires.

Acknowledging the limits of reason puts the assumption that reflective processes exclusively stimulate behavior that is in line with our long-term goals in another perspective. Instead, these findings raise the possibility that in some cases the reflective system, rather than correct our impulsive tendencies, will justify them. As such, by looking for supporting arguments that allow one to set aside long-term goals, the reflective system can play a substantial role in self-regulation failure.

Integrating these insights from judgment and decision making with self-regulation, we propose a justification-based mechanism of self-regulation failure. Specifically, by seeking or construing justifications for one's goal-discrepant behavior before enactment, we postulate that people sometimes indulge through reason rather than lack of willpower.

Every sin has its excuse

Evidence for justifications as facilitator of behavior originates in the judgment and decision making literature, indicating that people are more likely to choose the option that they can justify (Shafir et al., 1993). As the need to choose often creates conflict, decision makers seek and construct reasons in order to resolve the conflict and justify their choice (e.g., Kivetz, 1999; Shafir et al., 1993; Simonson, 1989). Crucially, the reasons people rely on do not necessarily favor decisions that satisfy the criterion of rationality (e.g., Shafir et al., 1993; Simonson, 1989). Instead the reasoning processes are often fuelled by our desires and motivations (Kunda, 1990). Moreover, people seem to focus on justifications that are consistent with their initial attitude to justify how they feel, constructing reasons for their present feelings (e.g., Nisbett & Wilson, 1977; Wilson & Schooler, 1991). As a result people use information flexibly so as to be able to justify their preferred outcomes (Boiney, Kennedy, & Nye, 1997; Hsee, 1995; 1996; Schweizer & Hsee, 2002). Applying these principles to the typical self-regulation dilemma of gratifying immediate desires versus the pursuit of long-term benefits, people might be inclined to pursue the hedonic option (cf. Elliot, 2006) and therefore will seek or construct justifications that will allow them to have the forbidden treat. Thus,

sometimes indulgence is not determined by one's capacity to control oneself, but rather by the availability of reasons that one has to justify the prospective indulgence. As such, rather than channelling or overriding our impulses to prevent self-regulation failure, the reflective system can also facilitate failures of self-regulation.

It is important to note that a justification-based framework of self-regulation failure contends that justifications *antecede* self-regulation failure. Whereas justification processes that people use to rationalize goal-discrepant behavior *ex post facto* have been studied extensively in the context of cognitive dissonance (e.g., Festinger, 1957), the focus in the present context is on situations where self-regulation failure is produced by -rather than producing- justifications.

Initial support for the notion that justifications can facilitate behavior that is not in line with one's standards comes from the domain of moral behavior, demonstrating that people whose past behavior (e.g., acting in a non-prejudiced way) provides them with some kind of moral credentials that license them to subsequently behave in a way that violates these principles (e.g., voicing prejudiced opinions; Effron & Monin, 2010; Monin & Miller, 2001). Further evidence comes from studies on consumer choice. As many purchasing decisions are tinged with a conflict between hedonic and functional considerations, such as spending on luxuries versus saving up, they often encompass a typical self-regulation dilemma between immediate gratifications and long-term considerations. In these studies (Khan & Dhar, 2006; Kivetz & Zheng, 2006; Mukhopadhyay & Johar, 2009) participants were presented with a justification (e.g., effort, prior restraint or excellence feedback) after which, allegedly in the context of another study, they could choose between an utilitarian and a luxury item. In support of a justification-based mechanism the findings revealed that participants who had a justification were more likely to make the indulgent choice (e.g., chocolate cake, designer jeans, low-brow movie) over the utilitarian choice (e.g., fruit salad, vacuum cleaner, high-brow movie) compared to participants who did not possess a justification.

While these findings provide initial support for the assumption that justifications can stimulate behavior that is not in line with one's standards or objectives, this does not necessarily translate to the typical self-regulatory situation where one must struggle to uphold one's distant goals in the face of temptation. To ascertain whether a justification-based mechanism is a distinct factor contributing to self-regulatory failure, several issues need to be addressed.

Firstly, to date the facilitative effects of justifications on goal-discrepant behavior have mainly been studied using hypothetical rather than actual behavior. As such these vignette studies do not bear the actual consequences or the promise of instant gratification that typically characterize self-regulatory processes in real life.

Relatedly, the (hypothetical) situations under study in these domains often did not involve gratifying immediate desires at the cost of negative future consequences. For example, choosing an entertainment magazine over a political magazine (Kivetz & Zheng, 2006) hardly bears any negative long-term consequences or alludes to any strong tempting or visceral urge that needs to be resisted as is often the case for the most difficult types of self-regulation (e.g., eating, smoking, drinking).

Furthermore, the explicit choice paradigms used in the research on consumer choice could have stimulated reasoning. Whereas seeking and constructing justifications can be considered to be an integral part of the decision-making process in choices between conflicting goals, in most cases of self-regulation failure the decisional conflict, and thereby the reliance on justifications, is less outspoken. Even more so as in consumer studies investigating justification processes, the dilemmas were constructed to highlight the tension between conflicting goals (hedonic versus functional). It has indeed been argued that in dilemmas that emphasize a contrast, rational deliberation is likely to play a leading role in resolving the dilemma, whereas in general judgment one is more likely to rely on quick affective judgment (Monin, Pizarro, & Beer, 2007). Thus, forcing people to choose between two contrasting options might induce deliberation and thereby promote justification processes. It remains unclear, however, whether self-regulatory behavior in itself, without an explicit alternative choice, evokes reasoning and therefore is susceptible to justification processes.

Finally, many of the justifications typically used in these studies reminisce of more impulsive factors underlying self-regulation failure. For example, justifications such as prior restraint or effort can also foster self-regulation failure due to depletion of self-control resources (Muraven & Baumeister, 2000). Conversely, sources of self-regulatory failure that are normally labeled as impulsive, such as negative emotions, could also rely on a justification-based mechanism. For example, being heartbroken could serve as an excuse to let go of one's good intentions. Therefore, justification processes should be distinguished from such impulsive factors to determine whether and when a justification-based mechanism can account for self-regulatory failure.

In sum, a justification-based mechanism provides an intriguing novel perspective on self-regulation failure that challenges the central notion of dual-process theories that the impulsive system is mainly responsible for self-regulation failure. At the same time, the number and nature of studies testing this mechanism do not allow for any conclusions about the role of justifications in typical self-regulatory behavior. The aim of this dissertation is therefore to address these gaps to establish whether justification processes are a relevant factor contributing to failures of self-regulation.

Overview of this dissertation

By investigating the impact of justification processes on actual self-regulatory behavior and ruling out alternative mechanisms, the present dissertation examined the validity of a justification-based mechanism as an explanation for self-regulation failure.

Eating behavior was chosen as the testing ground for our central hypothesis. In a food environment that is characterized by an abundance of unhealthy food, while at the same time the rising numbers of overweight and obesity make people increasingly concerned about their weight, eating behavior is not only a highly prevalent, but also a particularly relevant domain to study self-regulation failure. What makes the regulation of eating behavior especially difficult is that, in contrast to for example smoking and drinking alcohol, we cannot abstain from eating. Instead we continuously have to balance between eating sufficiently to survive and eating too much. As a justification-based model of self-regulation failure predicts that people rely on justifications to allow violations of a long-term goal, we expect justification processes only to occur in people for whom a specific self-regulatory behavior is relevant, meaning that they hold long-term goals for the behavior. In this light all studies were conducted in samples of young females as this group is known to be particularly concerned about their weight (e.g., Wardle, Haase, & Steptoe, 2006).

In the following chapter, Chapter 2, we will introduce a justification-based account of self-regulation failure by outlining a theoretical framework and reviewing the existing literature that supports a justification-based account. The remainder of the dissertation consists of four empirical chapters that each deal with a specific aspect of a justification-based account of self-regulation failure. Chapter 3 provides an initial test that self-regulatory dilemmas elicit justification processes, examining whether participants seek and construct justifications in the face of temptation. In Chapter 4, we test the effect of justifications on actual self-regulatory behavior, while ruling out important rival accounts such as resource depletion, negative affect and visceral states. By manipulating relative, rather than, actual effort we tested whether the perceived extra effort allowed participants to indulge in comfort foods while still having sufficient self-control capacity. Chapter 5 extends the findings from Chapter 4 by testing whether a justification-based account can also explain failures of self-regulation typically labeled as impulsive. It is hypothesized that, rather than being hijacked by our emotions, negative emotions sometimes facilitate self-regulation failure by serving as a justification to set aside long-term goals and to pursue the instantly gratifying option instead. Finally, whereas in the previous chapters it is investigated whether justifications are used to resolve self-regulatory dilemmas instigated by exposure to temptations, Chapter 6 explores the impact of justifications in the absence temptations. We expect that in people who have internalized a self-regulation dilemma, such as restrained eaters, having a

justification can elicit a hedonic orientation even without a temptation being present. In the final chapter of this dissertation, Chapter 7, the main results described in the previous chapters will be integrated and discussed.

Please note that the chapters were written in such a way that they can be read independently. Therefore the reader may find some repetition and overlap in the content of the following chapters.

Chapter 2

“Because I am worth it”:
A theoretical framework and
empirical review of a
justification-based account of
self-regulation failure

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Abstract

Self-regulation failure is often explained as a lack of willpower or being overwhelmed by impulse. The present paper proposes a novel pathway, presenting a theoretical framework and empirical review of a justification-based account of self-regulation failure. With justification we refer to making excuses for one's discrepant behavior, so that when experiencing a self-regulation dilemma between immediate impulses and long-term intentions, people resolve the conflict by developing and employing justifications that allow violations of the goal they endorse. Accordingly, rather than the impulsive system, the reflective system is responsible for self-regulation failure. We bring together empirical evidence from various domains demonstrating that justifications can instigate self-regulation failure and rule out alternative accounts. Having established justification processes as an independent factor contributing to self-regulation failure, we then propose several mechanisms that may fuel the effect. Finally, routes for future research and the conceptual and practical implications of these novel insights for self-regulation are discussed.

Meet Sally, Mark and Marcy. They are at a wedding party. The newly wed couple is about to cut the cake after which best man Mark will propose a toast and the real celebrations can begin. Sally is mesmerized by the wedding cake, but is in doubt as she is on a weight-loss diet that does not allow such tasty but unhealthy delicacies. Mark is getting increasingly nervous about the speech he is about to give, not sure if his jokes are indeed funny. The nerves make him crave nicotine, but a cigarette is of limited use since he quit smoking six weeks ago. Marcy has been sipping soda water all night. While she sees her friends enjoying their drinks, she regrets her offer to be the designated driver.

When the cake is cut, Sally decides that she will have a piece: it is a celebratory occasion after all. Mark also finally caves in and asks his friend for a cigarette, telling himself that he is allowed to have cigarettes in emergencies and, according to Mark, this is one. Finally, when everybody raises their glass for the toast, Marcy also falls off the bandwagon and has a glass of champagne, reasoning that having just one glass won't interfere with her ability to drive.

Most contemporary self-regulation theories would explain failure to act in accordance with one's goals as the result of our impulses taking precedence over reflective considerations, rendering us unable to resist the lure of immediate temptations. However, the above examples suggest that an impulsive breakdown of the self-control system is not the only route to self-regulation failure. Despite having the self-regulation capacity to avert indulgence, Marcy, Sally and Mark abandoned their goals by relying on a justification. These examples illustrate that sometimes people actively relent their self-regulation efforts, rather than lose self-control, by relying on justifications to permit themselves an otherwise forbidden pleasure.

While this notion has a familiar appeal to many of us, surprisingly, the role of justifications has been afforded hardly any attention as an explanation for self-regulation failure. Instead, research on self-regulation failure has, to date, mainly focussed on the relative strength of impulses for the gratification of immediate desires as an explanation for abandoning long-term goals. While we acknowledge the power of impulses in impairing our self-control capacities, we contend that the implicit assumption that the impulsive system is mainly responsible for failing to carry through long-term goals is incomplete. People often fail to follow through on their long-term goals not merely because of lack of willpower or being overwhelmed by impulse, but rather because they generate reasons for giving in to temptations. Therefore we postulate that reflective processes, in addition to impulsive forces, can play a substantial role in self-regulation failure by relying on justification processes. With justification we refer to the strategic employment of reasons for self-regulation failure before actual enactment so that the failure is made acceptable to oneself. Thus far, this route to self-regulation failure has been neglected in both the self-regulation literature and in dual-process theories.

In the present paper we present a theoretical analysis and empirical review of justification processes in self-regulation failure, exploring deeper the observation that failure is not always the consequence of impulsive factors, but can be the result of more reflective processes. We will first give a short overview of the conventional frameworks of self-regulation and specify the role of reflective processes in them. In the following section, we review the empirical evidence for justification processes in self-regulation and kindred phenomena, followed by an analysis of potential mechanisms that fuel the effect. Finally, we will discuss important issues raised by this novel perspective and sketch directions for future research.

Self-regulation as we know it

The ability to transcend immediate temptations in the service of long-term goals is a key aspect of self-regulation. That people often fail at this is reflected by the increasing prevalence of societal problems such as obesity (Flegal Carroll, Ogden, & Johnson, 2002), credit card debt (Bird, Hagstrom, & Wild, 1999), binge drinking (Wechsler, Lee, Nelson, & Kuo, 2002) and the like. To explain why people so frequently seem unable to act as they intend, many models of self-regulation have adopted the dual-process view that has gained prominence in explaining all types of psychological processes (e.g., Chaiken & Trope, 1999; Epstein, 1994; Kahneman & Frederick, 2002). Although each dual-process model has its own unique contentions, they share the postulation that self-regulation is determined by two fundamentally different processes that compete for control over behavior. These differing processes have been described using a variety of terms, such as reflexive versus reflective (Lieberman, 2007), hot versus cool (Metcalf & Mischel, 1999), and impulsive versus reflective (Strack & Deutsch, 2004). These labels characterize the processes underlying self-regulatory success or failure in terms of a deliberate, slow and rational system and an impulsive, fast and emotional system.

To illustrate, the hot/cool systems theory (Metcalf & Mischel, 1999) proposes that self-regulatory behavior is determined by the interplay of a 'hot' system and a 'cool' system. The hot system is activated in response to hedonically appealing stimuli, and, unless counteracted by the cool system, will stimulate indulgence. When the cool system is active, long-term considerations will have room to facilitate resistance of temptations. Along the same lines, the reflective-impulsive model of behavior (Strack & Deutsch, 2004; Strack, Werth, & Deutsch, 2006) distinguishes a rational and an impulsive route that interact to determine behavior; when cognitive resources are limited, behavior will be predominantly guided by the impulsive system which relies on implicit automatic preferences. However, when cognitive resources are available, the reflective system will take over, allowing for rational choices and explicit intentions.

Although these models do not have explicit predictions for the outcome of the processes in terms of self-regulatory success or failure, and thus leave open the possibility of a reflective pathway to self-regulation failure, this has hardly been followed up in the literature. Instead the contention that the impulsive system hosts automatic affective reactions, whereas the reflective system holds a person's explicit attitudes and standards, has led to the interpretation that the impulsive system is mainly responsible for self-regulation failure while the reflective system mainly guides behavior in line with one's goals (e.g., Bechara, 2005; Heatherton & Wagner, 2011; Hofmann, Friese, & Strack, 2009; Hofmann, Friese, Wiers, 2008). Accordingly, the reflective system would lead Marcy at the wedding party to choose the soda water (following her intention) over the champagne (what she longs for at that moment). The impulsive system on the other hand would leave Mark unable to control his cigarette craving before his speech (his impulse), losing sight of his intention to quit smoking. As such, self-regulation failure is commonly conceptualized as resulting from an inability of the reflective system to modulate the effects of impulsive processes. Consequently, the extensive literature on self-regulation failure now consists predominantly of determinants of failure stemming either from an overactive impulsive system (e.g., emotional and visceral influences, reward saliency, habitualness), or of indicators of a deficient reflective system (e.g., after alcohol consumption or under high cognitive load).

For example, the limited resource model (Muraven & Baumeister, 2000) postulates that our self-control resources are limited and when those resources are depleted, the impulsive system takes over leaving us unable to control our impulses; a state termed ego-depletion. Conversely, for the reflective system to successfully divert the detrimental influence of impulses, effort and control is needed. As a result the reflective system can only operate when sufficient resources are available, an idea that is supported by findings demonstrating that higher working memory capacity (Grenard et al., 2008; Hofmann, Gschwendner, Friese, Wiers, & Schmitt, 2008), and interference control capacity (Houben & Wiers, 2009; Wiers, Beckers, Houben, & Hofmann, 2009) weaken the impact of impulsive processes and thus strengthen self-control (see Hofmann, Schmeichel, & Baddeley, 2012 for an overview). To describe this delicate interplay between impulsive and reflective processes the metaphor of a horse and rider is often used to describe self-regulation, where the horse symbolizes the impulsive system guided by stimulus control that has to be reigned in by a reflective rider.

However, the distinction generally inferred from dual-process models between the impulsive system being mainly responsible for bad behavior and the reflective system being the producer of good behavior, is increasingly being challenged. Recent theorizing suggests that impulsive behavior can sometimes be adaptive to the same extent that reflective behavior may produce bad outcomes. For example, counteractive control theory (Fishbach, Friedman, & Kruglanski,

2003) argues that resistance of temptations can be the result of automatic processes, demonstrating that confrontation with a temptation does not impulsively lead to self-regulation failure but instead can boost self-regulation by automatically activating long-term goals. Likewise, Rawn and Vohs (2011) recently argued that some actions commonly labeled as self-regulation failure such as smoking and drinking alcohol may be carried out as a strategic means of reaching a goal. For instance, a teenager may have to exert self-control to overcome the initial aversive effects of nicotine in order to belong to his peers, in which case smoking can be defined as an act of self-regulation. In other words, whereas dual-process models of self-regulation mostly focus on a reflective route towards effective self-regulation and an impulsive route to failure, alternative routes are possible. In this paper we will focus on the role of the reflective system in facilitating goal-defying behavior more closely. Specifically we posit that by relying on justifications to set aside long-term goals, reflective processes can play a substantial role in self-regulation failure.

The observation that the reflective system can contribute to self-regulation failure is in fact not surprising when the limitations of our reasoning capacities are taken into account. Not only is our rationality bounded (Simon, 1982), but reasoning can even lead to suboptimal outcomes or outcomes not in line with our self-interests (e.g., Wilson & Schooler, 1991). Moreover, our reasoning processes are often guided by our motivations and desires (Hsee, 1995; Kunda, 1990). As such reflective processes can also contribute to 'irrational' choices (Mercier & Sperber, 2011; Shafir, Simonson, & Tversky, 1993; Simon, 1990, 1992).

Acknowledging the limits of reason puts the assumption that the reflective system would lead to enactment of our explicit goals in another perspective. Although this notion has been recognized in some dual-process models of self-regulation (cf. Strack & Deutsch, 2004), it has not been systematically incorporated in models of self-regulation or reflected in the self-regulation literature (see Kivetz & Zheng, 2006 for an exception). In this paper we will consider the evidence for this additional route to self-regulation failure, in recognition of the idea that not only the horse can steer us away from our goals, but that the rider can also entice us to do unwise things.

Introducing a justification-based mechanism of self-regulation failure

More than ever people in Western industrialized society are confronted with conflicting motivational pressures. People hold goals to be thin, athletic, productive or successful but are continuously faced with temptations threatening these goals. Marcy for example experiences a conflict between what she wants at that moment (the wedding cake) and what she should do to reach her long-term aims (skip the cake and go for the crudités instead). She could resolve this conflict by attempting to resist her urge to indulge in the cake, an effortful process that leads to effective self-regulation. Alternatively, she could resolve the motivational

conflict by creating or activating justifications that allow her to indulge in the chocolate cake. As such, justification processes that by their slow, analytical and strategic nature would be considered a product of the reflective system in the traditional dual-process model distinction, can contribute to self-regulation failure.

With justification we refer to the act of making excuses for one’s discrepant behavior before actual enactment, such that the prospective failure is made acceptable for oneself. In other words, when experiencing a self-regulation dilemma between immediate impulses and long-term intentions, people resolve the conflict by developing and employing justifications that allow violations of the goal they endorse. To date, the use of justifications for discordant behavior has mainly been studied in the context of cognitive dissonance (e.g., Festinger, 1957). However, because of the post-hoc etiology, cognitive dissonance is not useful in accounting for how people rely on justifications to rationalize *prospective* deviances of goal directed behavior. In this review we focus on situations in which justifications are the cause rather than the consequence of goal transgressions.

Evidence of justifications as a facilitator of behavior originates in judgment and decision making literature, indicating that people are more likely to choose the option that they can justify (Shafir et al., 1993). As the need to choose often creates conflict, decision makers seek and construct reasons in order to resolve the conflict and justify their choice (e.g., Kivetz, 1999; Shafir et al.; Simonson, 1989). As the typical self-regulation dilemma of gratifying immediate desires versus the pursuit of long-term benefits by definition entails a conflict between opposing goals, justification processes seem particularly relevant for understanding self-regulation failure. Applying these principles to the context of self-regulation, one would assume that a justification-based mechanism will favor behavior in line with our intentions simply because corresponding with our long-term goals should be a compelling justification. However, as noted by Shafir et al., having a reason seems to be more important than the quality of the reason. That is, decisions are based on the mere availability of reasons, the nature and the quality of the reason tend to be disregarded: people appear to prefer ‘shallow but nice sounding’ justifications (Simonson 1989, p. 170). Moreover, people seem to focus on justifications that are consistent with their initial attitude to justify how they feel, constructing reasons for their present feelings (e.g., Mercier & Sperber, 2011; Nisbett & Wilson, 1977). As such, a justification-based mechanism would predict that when confronted with a typical self-regulation dilemma where people might be more inclined to pursue the hedonic option (cf. Elliot, 2006), people will be motivated to seek or construct justifications that will allow them to justify it. This implies that when people find themselves in a situation where they are tempted by something they know they really should not do, they might be successful in constraining themselves, unless they find a reason, any reason, to give in. As such our capacity to reason can become a liability when it comes to self-regulation failure.

Isolated illustrations of justifications facilitating behavior that is not in line with one's standards come from a variety of fields, such as health behavior, moral behavior and consumer choice. Yet these various empirical demonstrations have never been assembled to substantiate a justification-based account of self-regulation failure. In the following section we aggregate evidence for a justification-based mechanism. This includes work that was not explicitly conducted within this framework but that nevertheless seems to capture the phenomenon that we sometimes rely on justifications to allow oneself a forbidden pleasure.

Empirical evidence for justification processes in self-regulation failure

The role of justifications was first studied in the context of moral behavior where justifications could lead one to violate one's moral principles such as exhibiting prejudiced, sexist, or selfish behavior (see Merritt, Effron, & Monin, 2010 for a review). For example, Monin and Miller (2001) showed that choosing an African American -who was the most qualified applicant- for a hypothetical job, increased the likelihood that participants would describe a subsequent job as better suited for White applicants. This and similar findings were attributed to the fact that people whose past behavior (e.g., acting in a non-prejudiced way) provided them with some kind of 'moral credentials' that licensed them to subsequently behave in a way that violated these principles (e.g., voicing prejudiced opinions; Effron, Cameron, & Monin, 2009). To describe this phenomenon, Monin and Miller (2001) employed the term moral self-licensing.

Further evidence for a justification-based mechanism underlying behavior discrepant with one's goals comes from studies on consumer choice. As many purchasing decisions are tinged with a conflict between hedonic and functional considerations, such as spending on luxuries versus saving up or spending on necessary items, they often encompass a typical self-regulation dilemma between immediate gratifications and long-term considerations. As in general the purchase or consumption of such luxury goods is harder to justify than the consumption of utilitarian products, having a justification should increase the likelihood of indulging in luxury consumption. Indeed, a justification-based mechanism appears to be the backbone of the popular consumer loyalty programs. Kivetz and Simonson (2002) demonstrated that participants preferred a luxury award over an utilitarian reward of equal value when the program requirements (e.g., frequency of purchase) were high (vs. low). The greater effort presumably served as a justification for the purchase of luxuries. A justification-based mechanism is also thought to underlie charity incentives where people can contribute to charity by purchasing luxuries. Strahilevitz and Myers (1998) demonstrated that such charity incentives are more effective in promoting luxury than utilitarian consumption. The donation to charity

that the luxury consumption encompasses is thought to reduce the guilt normally associated with the purchase of luxury items

The facilitating role of justifications on consumer indulgence has also been demonstrated in experimental settings. Typically, participants in these studies were presented with a justification after which, allegedly in the context of another study, they could choose between an utilitarian and a luxury item. These studies consistently demonstrated that providing participants with a justification (e.g., effort, excellence feedback, contributing to charity or volunteering) increased choice of a luxury product (e.g., designer jeans, Khan & Dhar, 2006; indulgent chocolate cake, Kivetz & Zheng, 2006) over a utilitarian product (e.g., vacuum cleaner, Khan & Dhar, 2006; healthy fruit salad, Kivetz & Zheng, 2006) compared to participants not provided with a justification. Having a justification not only increases preference for hedonic over functional choice but also increases hedonic consumption, such as eating unhealthy snacks (De Witt Huberts, Evers, & De Ridder, 2012a; De Witt Huberts, Evers, & De Ridder, 2012b; Werle, Wansink, & Payne, 2011; Wilcox, Vallen, Block, & Fitzsimons, 2009), suggesting that justification processes also play an important role in self-regulatory processes that are under the influence of visceral drives (e.g., hunger) and that involve actively regulating one’s desires rather than choosing.

The impact of justifications on actual self-regulatory behavior has also been studied outside the laboratory. In an experience sampling study it was found that justifications predicted food intake in dieters, suggesting that justifications can prompt diet-breaking behavior in an everyday context (Kronick, Auerbach, Stich, & Knäuper, 2011). A tendency to rely on compensatory justifications has also been related to long-term outcomes such as a higher BMI in dieters (Knäuper, Rabiau, Cohen, & Patriciu, 2004) and poor metabolic control in diabetes patients (Rabiau, Knäuper, Nguyen, Sufrategui, & Polychronakos, 2009).

Finally, recent findings indicate that people not only use justifications available to them when confronted with a self-regulation dilemma, but that exposure to a temptation also leads people to actively seek or construct justifications (De Witt Huberts, Evers, & De Ridder, 2012c). Such findings suggest that self-regulation conflicts can trigger justification processes spontaneously.

As outlined above having a justification can facilitate behavior that counteracts one’s explicit intentions, norms and values, with empirical evidence demonstrating that justifications play a substantial role in the self-regulation context of gratifying immediate needs versus pursuing long-term goals.

Having established that justifications play a role in self-regulation failure, the question rises what kind of justifications people rely on to allow themselves an otherwise forbidden pleasure. A review of the empirical evidence reveals the following list of common justifications. We would like to note that the categorizations are ours, and limited only to the justifications that have actually

been studied. As the justifications people rely on may be idiosyncratically determined and influenced by situational factors, the list of justifications may be more exhaustive in reality. Nevertheless, focus group studies and the recent evidence for self-generated justifications indicate that the justifications that participants came up with were mostly related to one of the categories outlined below (De Witt Huberts et al., 2012c; Mick & Demoss, 1990; Xu & Schwarz, 2009).

Altruistic and laudable acts. In a series of studies by Khan and Dhar (2006) imagining oneself having contributed to a charitable cause, such as teaching children in a homeless center or improving the environment, increased choice of a luxury product (designer jeans) over a utilitarian product (vacuum cleaner) compared to people who did not have to think of benevolent deeds (Study 1). In the same line of studies, participants who imagined having donated a part of their tax refunds to a charity were more likely to subsequently choose a pair of luxurious expensive sunglasses over a pair of practical, less expensive sunglasses (Study 2). Likewise, when participants were asked to indicate their willingness to help a foreign student with understanding a lecture, they were less likely to donate the money they earned by participating to a local charity and preferred to keep it for themselves, as compared to participants in the control condition, who did an unrelated task before being asked to donate money to charity (Study 3). In another study by Mukhopadhyay and Johar (2009) it was found that if participants thought they contributed to charity by buying a chocolate bar, they preferred chocolate cake over fruit salad in a subsequent choice task (Study 3). These examples indicate that good behavior can be used to justify indulgent behavior regardless if the laudable behavior entails investing time and effort or indulging. What is particularly notable is that in most studies in this context participants did not actually have to perform the behavior. Even imagining laudable behavior in a vignette study or intending to help produced these results (Khan & Dhar, 2006).

Effort and achievement. In a review on the role of justifications in self-control failure, Kivetz and Zheng (2006) concluded that the most common justifications entailed either hard work or excellence feedback, suggesting that effort and achievement can serve as a justification to allow oneself a forbidden pleasure. This phenomenon can presumably be traced back to the puritanical idea that one is entitled to the good life only after hard work (Weber, 1958), which is also reflected in findings from qualitative studies where people indicate to only allow themselves a pleasure when they feel they earned it (Mick & Demoss, 1990; Xu & Schwarz, 2009).

Empirical evidence for this notion comes from a line of studies demonstrating that justifications such as having exerted (relatively) more effort in an unrelated task or excellence feedback on an unrelated performance task steered participants' preference towards the more indulgent options in subsequent choices, favoring low-brow over high-brow movies (Study 1b); indulgent chocolate

cake over healthy fresh fruit salad (Study 1c); an entertainment magazine over a political magazine (Study 2); and increased the likelihood of subsequent participation in a fun study with no delayed benefits rather than in a painful self-assessment study with long-term benefits (Study 1a) compared to participants who did not dispose of these justifications (Kivetz & Zheng, 2006). Similar results were obtained in a study from our lab that demonstrated that not actual effort but perceived effort increased hedonic consumption in a subsequent taste test (De Witt Huberts et al., 2012a). Participants had to complete a non-involving task on the computer. In the effort condition, participants were told halfway that they had to do the task again (thus doing the task for 2 x 5 minutes); in the control condition, participants received no such instruction (and thus completed the task as if it were a single task of 10 minutes), thereby manipulating perceived effort while keeping actual effort constant. Participants who were led to believe that they had completed two tasks consumed on average 130 calories more in a time span of 10 minutes than participants who actually performed the same task but thought they had only completed a single task.

In a recent study it was demonstrated that actually exerting effort is not necessary to induce similar effects: simply reading about a 30 minute walk as an exercise activity increased consumption of indulgent snacks compared to participants who were instructed to think of that same 30 minute walk as a leisurely activity or a control group who had read about a non-exercise related activity (Werle et al., 2011).

Prior restraint. Prior restraint can also justify subsequent indulgent choice. Mukhopadhyay and Johar (2009) asked participants to remember an instance where they had seen a product on sale that they had not intended to buy and either ended up buying it or had resisted buying it. Those who had to remind themselves of a prior instance where they had exercised restraint by not buying an attractive product, tended to prefer the chocolate cake over the healthier fruit salad in a subsequent choice task, their prior restraint presumably serving as a justification for their indulgent choice. Along the same lines, Mukhopadhyay, Sengupta, and Ramanathan (2008) asked participants to recall an instance of past behavior where they either had succumbed to or had resisted a food-related temptation. Participants who were instructed to think of prior resistance, ate more cookies in a subsequent taste test than participants who recalled having succumbed.

Prior success or failure. A justification related to prior restraint is perceived goal progress. As many self-regulation dilemmas often involve trade-off between two opposing goals (e.g., Fishbach & Dhar, 2005; Stroebe, Papies, & Aarts, 2008), progress towards one goal often implies moving away from the other goal. A series of studies in the context of the goal progress model (Fishbach & Dhar, 2005; Louro, Pieters, & Zeelenberg, 2007) demonstrated that actual or perceived goal progress

in one domain led to more indulgence in the opposing domain (e.g., losing weight vs. choosing a hedonic snack; studying vs. going out with friends).

Conversely, although not explicitly studied in a justification context, having failed to attain one's goal could also serve as a justification to even further abandon one's goal. Notorious in this regard is the 'what the hell effect' in restrained eaters. Numerous studies demonstrated that restrained eaters, people who have the goal of restricting food intake to reach a certain weight, do not show a physiologically normal compensation effect after consuming a preload (cf. Herman & Mack, 1975). Whereas normal eaters decrease their food intake after a preload milkshake, listening to their normal bodily signals, restrained eaters *increased* their food intake after having the milkshake. Having broken their diet by consuming a milkshake apparently serves as a reason to completely abandon their diet for the day. This abstinence violation effect, as it is also known by, has been found within other self-regulation domains as well, such as in abstinent alcoholics, smokers and illicit drug users (e.g., Collins & Lapp, 1991; Shiffman et al., 1996; Stephens & Curtin, 1994).

Future choices and intentions. Another type of frequently studied justifications are future choices and intentions. For example, in a study by Khan and Dhar (2007) participants had to choose between a relatively healthy or indulgent snack. Whereas the choice was framed as a single choice opportunity for half of the participants, the other half of the participants were informed that they would have the possibility to choose between the two snacks again in the following week. Participants believing that they could choose again next week were more likely to favor the indulgent option in the present choice. Merely knowing that one would have the option to choose again at a later time, presumably justified people to act indulgently, as the possibility to act in line with one's intentions in the future served as a justification to break their rules in the present. The same reasoning could potentially apply to the intriguing finding that the addition of a healthy option to several unhealthy options in a choice task led people to eventually choose the unhealthy option. Ironically, it was found that especially participants who were high in trait self-control chose a more indulgent option when the healthy option was present (Wilcox et al., 2009). The authors attributed this counterintuitive effect to a justification process, where the presence of the healthy food option made participants consider it, which in itself could function as (indirect) fulfilment of the long-term goal that subsequently justified choosing an unhealthy option. Another possible explanation suggested by the authors was that the presence of a healthy item reminded participants of previous occasions where they had made a healthy choice, thereby providing a justification for indulging in the unhealthy option now.

A related demonstration of how future plans and choices can endanger current self-regulation is the evidence that forming particular justifications about undoing the negative effect of the indulgent behavior, can bring about such

indulgent behavior (also see Rabiau, Knäuper, & Miquelon, 2006). In other words, when confronted with the wedding cake, Marcy may form compensatory intentions such as “I will go exercising tomorrow” or “I will eat less tomorrow”, which will allow her to violate her dieting rules now and indulge in the cake. In the context of the compensatory belief model (Rabiau et al., 2006), dieters had to report their caloric intake and their compensatory justifications seven times a day for one week using an experience sampling methodology. The results revealed that forming such justifications predicted caloric intake (Kronick et al., 2011). Likewise, participants who were instructed to make plans to exercise later that day consumed more M&Ms in a subsequent taste test than participants who had not been asked to make concrete plans for physical activity (Kronick & Knäuper, 2010).

Another compelling example of the detrimental effect of future intentions on current self-regulation is the finding that restrained eaters who plan to start a weight-loss diet will use that future intention as justification to indulge in the soon-to-be forbidden food while they still can (Urbszat, Herman, & Polivy, 2002).

Negative emotional events. That negative emotional experiences can also serve as justification to temporarily abandon self-regulatory goals was demonstrated in our lab (De Witt Huberts et al., 2012b). In three studies a negative affective state was induced in all participants by showing them aversive pictures. The duration of exposure to the negative pictures was manipulated such that one group was highly aware of having seen the pictures whereas the other group was only minimally aware. Only participants who were highly aware of having seen the negative pictures, and thus could use the negative affective triggers as justification, consumed more hedonic snack foods in a subsequent taste test. Importantly, the increase in hedonic consumption could not be attributed to differences in negative affect as both groups reported feeling equally negative.

Conclusion. The most intriguing observation that emerges from the overview of empirically studied justifications is the ease by which justification can propel self-regulation failure. Merely reading about a potential justification in vignette studies, imagining a laudable act or effort, both goal achievement and failure, and considering or intending to pursue the long-term goal again can make people digress from their long-term goal. Moreover justifications can be related to the goal that they violate and in a sense constitute ‘rational’ or logical justifications (cf. Rabiau et al., 2006), such as justifications about undoing the negative effects of the indulgent behavior or perceived goal progress, but justifications can also be unrelated to the behavior that is being justified, and thereby appear to be rather arbitrary.

It can be concluded that people do not seem to be very critical of the reasons they apply to violate their intentions. This apparent susceptibility of people to rely on justifications indicates how easily justification processes can become

maladaptive, underlining their importance as an explanation for self-regulation failure.

It seems that, although under different names, in the past decade quite some evidence has been gathered that points towards a facilitative role of justifications on norm-violating behavior, luxury choice and indulgent behavior, suggesting that a justification-based mechanism should be taken into account when explaining self-regulatory failure. However, the findings attributed to justification processes share many similarities with other mechanisms of self-regulation failure. To establish whether justification processes contribute to self-regulatory failure, alternative mechanisms for the presented findings need to be ruled out.

Establishing justification processes as independent determinant of self-regulation failure: Alternative theories and explanations

Examining the evidence reviewed above suggests that the justifications that have been found to interfere with goal striving share many similarities with other antecedents to self-regulation failure. In this section we will review alternative accounts to establish whether justifications are independently contributing to self-regulation failure.

Goal progress model. An account that a justification-based mechanism shares many similarities with is the goal progress model, which views self-regulation failure as a trade-off between two competing goals (Dhar & Simonson, 1999; Fishbach & Dhar, 2005; Louro et al., 2007). Typically self-regulation dilemmas involve two opposing goals that people intend to pursue, where pursuing one goal means inhibiting the progress towards the other goal. The goal progress model proposes that when a person believes sufficient progress towards one goal has been made (for instance by skipping the starter at diner, progressing to the goal of a slim figure), he then pursues the opposing goal of enjoying culinary delights (by choosing a tasty dessert). To illustrate, Fishbach and Dhar (2005) asked female dieters to indicate how far off they were from their ideal weight on a scale that either had -5 lbs. (narrow scale) or -25 lbs. (wide scale) as its end-point. The wide scale would lead dieters to believe they had made sufficient progress since the same discrepancy from one's ideal weight would appear small on the wide scale but wider on the narrow scale. Significantly more participants in the wide scale condition chose a chocolate bar over an apple as a parting gift.

However, as the reviewed justifications indicate, the effects of a justification-based mechanism are not limited to justifications that are within the same domain as the behavior that is being justified as posited by the goal progress model. That is, in order for Marcy to indulge in the wedding cake it is not necessary that her justification is related to successful dieting attempts. Instead, according to a justification-based mechanism, any justification is valid to license gratification, so that Marcy could justify her indulgence on the virtue of the celebratory occasion.

Indeed, in the majority of studies that demonstrated a justification-based mechanism, justifications such as effort or excellence feedback on cognitive tasks or laudable acts, licensed indulgent behavior in an unrelated domain (eating, shopping behavior, luxury choice), ostensibly as part of another study (Kivetz and Zheng, 2006; Khan & Dhar, 2006; De Witt Huberts et al., 2012a).

From consumer research comes a related alternative explanatory account for the observed effects based on the notion of balancing among choices (Dhar & Simonson, 1999; Novemsky & Dhar, 2005), which extends to a more abstract level than the goal progress model in that people attempt to achieve balance between indulgence and restraint in general rather than within a specific domain. According to this account, within a sequence of multiple choices people prefer to alternate outcomes which allows them to pursue both utilitarian as well as hedonic goals. That is, preferences among alternatives can be affected systematically by consumers' prior actions such that an initial hedonic choice would lead to a preference for a more restrained option and vice versa. That the findings attributed to a justification-based mechanism cannot be accounted for by such a balancing mechanism among choices was convincingly demonstrated in a study by Mukhopadhyay and Johar (2009). In line with the balancing account they found that when people had just bought chocolates as part of the experiment, they were more likely to subsequently choose fruit salad over chocolate cake. Crucially however, this preference for fruit salad over chocolate cake was reversed when people were led to believe they had donated to charity by buying chocolates. Donating to charity by hedonic consumption justified the subsequent choice of a hedonic snack, thereby ruling out a balancing mechanism.

Resource-depletion. Justifications such as effort (e.g., Kivetz & Zheng, 2006; De Witt Huberts et al., 2012a) and prior restraint (e.g., Mukhopadhyay & Johar, 2009) reminisce of another important theoretical framework to explain self-regulation failure: the limited resources model (e.g., Baumeister, Bratslavsky, Muraven, & Tice, 1998; Hagger, Wood, Stiff, & Chatzisarantis, 2009; Muraven & Baumeister, 2000). In this model, self-control is regarded as a limited resource that is depleted by exerting self-control, thereby limiting the ability to restrain subsequent behavior. Failures of self-regulation incited by justifications such as prior restraint or prior effort, which deplete self-control resources, could thus also be attributed to a loss of self-control instead of justification processes. However, the findings that merely being reminded of or imagining a prior act of restraint instead of actually exerting restraint, or manipulating relative rather than absolute effort, cast doubt on this alternative account as explanation for a justification mechanism. Although these studies suggest that self-regulation failure occurs without actually exerting self-control, resource depletion could not be ruled out indefinitely as an explanation for the observed effects. For instance, Ackerman and colleagues (2009) found evidence for vicarious resource depletion: imagining

another person exerting self-control depleted self-control resources despite not actually engaging in an effortful task. It could be possible that having the impression of having exerted effort or restraining oneself produces similar results. A more direct test to rule out this rival account was therefore needed to establish whether justification cues such as effort or restraint worked through a justification-based mechanism. Therefore, two studies tested whether the justification cues commonly used in justification-based accounts required self-control resources (De Witt Huberts et al., 2012a). Results indicated that participants thinking they had exerted relatively more effort by completing two tasks of five minutes consumed more snacks in a subsequent taste test compared to participants who thought they had completed a single task of ten minutes while self control resources, measured by a Stroop task, did not differ among participants. These findings confirm that justifications can instigate self-regulation failure whilst the resources to regulate this behavior remain intact, thereby ruling out resource-depletion as an alternative account for the finding that prior restraint and effort can justify subsequent goal violations. These findings imply that although people may still have the self-regulation capacity to avert indulgence, they may not always do so if they have the opportunity to justify it.

Negative affect. That negative emotions are often related to self-regulation failure is reflected in terms such as ‘emotional eating’ or ‘retail therapy’. While negative emotions are considered to be a prototypical ‘hot’ factor in self-regulation models (e.g., Metcalfe & Mischel, 1999), and impulsively lead to self-regulation failure (Heatherton & Wagner, 2011; Loewenstein 1996; Loewenstein, Weber, Hsee, & Welch, 2001), findings from our lab reveal a justification-based pathway by which negative emotions exert their detrimental influence on self-regulation. In three studies the use of emotions as a justification was investigated while ruling out the direct effects of negative emotions on self-regulation failure by varying the exposure to aversive stimuli (De Witt Huberts et al., 2012b). In the low-awareness condition participants were exposed very briefly to negative stimuli, whereas in the high-awareness condition participants were exposed long enough to fully apprehend the negative stimuli. While the priming procedure made participants in both conditions equally negative, only participants who were more aware of being exposed to the negative stimuli consumed more in a subsequent, ostensibly unrelated, taste test. In support of a justification-based mechanism, it appeared that despite feeling equally negative, only participants who were highly aware of being confronted with an emotional event could use their emotional experience as a justification to indulge, a justification not at the disposition of participants who were minimally aware of the emotional stimuli. Importantly, participants in the high-awareness condition only consumed more of forbidden snacks but not of equally palatable but healthy snacks, supporting the notion that awareness of the negative event served as a justification to allow oneself a forbidden pleasure rather than an

attempt to ameliorate one’s negative state (cf. Tice, Bratslavsky, & Baumeister, 2001).

Presumably the widespread idea that emotions render one powerless over one’s behavior is a compelling justification to behave more indulgently than one would otherwise allow oneself to behave. It has indeed been found that transgressions of one’s moral standards are evaluated less harshly when they occur in an emotional state compared to similar moral transgression in a neutral state (Pizarro, Uhlmann, & Salovey, 2003). Similar results were found for violations of one’s dieting intentions: participants who imagined eating a whole package of cookies despite being on a diet while feeling sad, indicated to feel less responsibility, less guilty and less blame for their diet-breaking behavior compared to participants who read the same description without any references to their emotional state (De Witt Huberts et al., 2012b, Study 1).

Conclusion. Comparing the evidence for a justification-based mechanism with other accounts of self-regulation failure suggests that while a justification-based explanation may share many similarities with other mechanisms, it seems to be a distinct mechanism contributing uniquely to self-regulation failure. Interestingly, the comparison further reveals that instigators of self-regulation failure normally attributed to impulsive mechanisms, such as resource-depletion or negative emotions, can also be accounted for by a justification-based mechanism. Having established justification processes as an independent account for explaining self-regulation failures, the questions rises what the underlying mechanism of this phenomenon is. In the following section we will explore several possibilities and review the evidence for it.

Underlying mechanisms of justification-based self-regulation failure

In this section we will review several potential mechanisms by which justifications disturb self-regulation. Besides several studies investigating the mediating effect of a reinforced self-concept in justification-based self-regulation failure (Khan & Dhar, 2006; Mukhopadhyay & Johar, 2009), to our knowledge there are hardly any other studies that have directly tested the underlying mechanism. Therefore, in addition to the evidence for a reinforced self-concept, we propose several other potential underlying processes borrowing from major psychological theories explaining human motivation, including cognitive dissonance, anticipated affect and motivated reasoning.

Prefactual cognitive dissonance. Marcy’s decision to have a glass of champagne despite her strong intentions and full awareness of the possible negative consequences is, despite seemingly mundane, actually more counterintuitive than one might expect. After all, behaving in ways that run counter to one’s wishes, intentions or principles, violates a fundamental human need for seeing oneself as a rational and consistent person. Yet, one of the most consistent

findings within psychological research is that personal inconsistency is uncomfortable and threatening (Festinger, 1957). Cognitive dissonance in its purest sense cannot account for the findings reviewed above, as the outlined evidence concerned the use of justifications before an actual transgression happens, while cognitive dissonance is concerned with the justifications that people may use to rationalize self-gratification ex-post facto (Festinger, 1957). However, a justification-based mechanism does seem to fit with the broader set of psychological theories that focus on the need for cognitive consistency and its implications (e.g., Festinger, 1957; Heider, 1958). We suggest that analogous to the reliance on justifications to resolve cognitive dissonance caused by behavior in the past, it is possible that justifications might help people to resolve a conflict evoked by prospective behavior.

Human beings have the unique ability to imagine the consequences of their behavior in advance. This prefactual thinking allows people to investigate the different consequences, and potentially experience dissonance between one's cognitions and the (future) behavior that one is contemplating. From this point of view it could be argued that the conflict Sally experiences when she is tempted by the instant pleasure of the cake while being fully aware of how guilt ridden and self-deprecating she might feel by eating it is similar to the cognitive dissonance she might experience after actually having succumbed to the cake.

It should be noted however, that our attempt to fit the principles of a justification-based account of self-regulation failure into the framework of cognitive dissonance research remains speculative, as Festinger himself contended that cognitive dissonance could only be evoked by prior behavior (Festinger, 1957), while others did consider prefactual cognitive dissonance to be a possibility (see Brownstein, 2003 for a review). Thus while the discomfort induced by a self-regulation dilemma beforehand, and actual cognitive dissonance experienced afterwards, might be phenomenally different and not count as cognitive dissonance in the classical sense, the processes remain similar in that both accounts imply that the person must experience some kind of conflict and that this conflict is resolved by means of a justification. In the case of justification induced self-regulation failure this process occurs beforehand, and in the classical cognitive dissonance paradigm after the transgression has become a reality.

Anticipated affect. Closely related to, and potentially overlapping with, the prefactual cognitive dissonance account as an explanation for justification induced self-regulation failure is the literature on anticipated affect.

Regret and guilt are powerful forces in motivating and giving direction to behavior, because people are motivated to prevent regret and guilt from happening (Simonson, 1992; Tangney & Dearing, 2002; Zeelenberg & Pieters, 2007). Much of the conflict experienced in self-regulation dilemmas stem from the concern about the anticipated negative consequences of a choice: Mark would not experience

discord if he did not anticipate that having a cigarette would make him feel guilty afterwards. That avoiding these negative consequences is a powerful motivator of human behavior is evidenced by the finding that anticipated regret plays a substantial role in self-regulation, preventing people from abandoning their good intentions (Abraham & Sheeran, 2003; Sandberg & Conner, 2008). Similarly, work by Giner-Sorolla (2001) indicates that self-conscious emotions such as guilt and regret can boost self-regulation in self-regulatory dilemmas. For Mark, knowing that he will feel like failure after smoking is presumably the main motivator to refrain from smoking. As such many, if not most, self-regulation conflicts involve a form of anticipated regret or guilt. This anticipated negative affect, and thereby potentially its reinforcing effect on effective self-regulation, might be countered by means of justifications.

Research has shown that justifiable decisions lead to less regret than unjustifiable decisions (Connolly & Reb, 2005; Connolly & Zeelenberg, 2002). If anticipated regret leads people to engage in thoughtful decision making, using a justification, even though faulty, could give people the impression having made a careful decision, thereby alleviating regret or guilt about one's behavior (e.g., Reb & Connolly, 2010. Also see Janis & Mann, 1977). As such, the anticipated regret and guilt evoked by self-regulation conflicts stimulates the seeking and construction of justifications to avoid these anticipated negative feelings.

The effect of anticipated guilt was investigated in a study by Khan and Dhar (2007; Study 3). After half of the participants were provided with a justification (future choice), all participants had to indicate the degree of guilt they would feel after eating the healthy option (yoghurt) and the unhealthy option (cookie), before actually choosing between these products. Participants who had a justification anticipated less guilt in choosing the vice than participants who did not have a justification. The reduced anticipated affect mediated the effect of justifications on indulgent choice. Thus having a justification before a choice decreases the anticipated guilt related to the indulgent choice, thereby stimulating the indulgent choice.

Related evidence in support of this assumption comes from the line of studies conducted by Kivetz and Zheng (2006). They found that the effect of justifications was particularly strong in people who were dispositionally more prone to feelings of guilt (Studies 3-5). Moreover, in a subsequent study guilt was experimentally manipulated by asking participants to remember either two or eight occasions in the past week where they had failed to resist temptation. It was assumed that remembering two instances of self-regulation failure would be relatively easy, thereby conveying the impression that they often failed at self-regulation attempts and inducing relatively high levels of guilt. Having to remember eight examples of self-regulation failure within the last week was assumed to be difficult for participants, conveying the impression that they were relatively

successful in sticking to their intentions, and leading to lower levels of guilt. Results indeed indicated that participants experiencing high levels of guilt were more likely to rely on a justification to allow oneself a subsequent indulgence than participants who experienced low levels of guilt. This finding is not in line with the common finding that people who experience guilt are more likely to exert self-control (Giner-Sorolla, 2001). It thus seems that justifications may undo the protective role of self-conscious emotions such as guilt and regret.

In further support of this notion, the literature on hedonic consumption indicates that it is a widely held belief that indulging without a justification will evoke feelings of guilt and regret and that having a justification mitigates the psychological pain of violating one's intentions (Kivetz & Simonson, 2002; Kivetz & Zheng, 2006; Lascu, 1991; Mick & Demoss, 1990; Okada, 2005; Xu & Schwarz, 2009). However, while universally accepted, a recent study suggests that these expectations may be incorrect. Xu and Schwarz (2009) investigated whether consumers indeed experienced more guilt when they consumed hedonic products without a valid reason. Their findings indicated that although participants expected less enjoyment when they would indulge without good reason than when they indulged with a reason (such as a reward for high effort), their reported affect during and after the indulgence episode did not demonstrate any difference in enjoyment between indulging with or without a justification. It thus seems that people's expectancies are not in line with their actual experiences, a finding that fits with the broader literature indicating that people's predictions of future feelings tend to be off the mark (e.g., Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998).

Yet although participants may not actually experience more guilt when they indulge without good reason, the belief seems to be quite persistent: it was found that participants, despite the disconfirming experience, still retained their belief that one needs a justification to indulge, even if they did not experience an actual increase in guilt when their gratification was without reason. According to Xu and Schwarz (2009) the persistent nature of this belief can be explained by two factors. Firstly, the expected guilt and regret may prevent them from indulging without a justification in the first place, thereby preventing them from having disconfirming experiences. Secondly, when asked how they usually feel when indulging with versus without a reason, their global memories are based on their basic semantic knowledge and expectancies, thus that one needs a reason to indulge, rather than their actual experiences.

Although it seems that people may hold erroneous beliefs about how they will feel when they indulge with or without a good reasons, the very belief, while inaccurate, may underlie the seeking and construction of justifications in order to alleviate the anticipated guilt and regret induced by the self-regulation conflict. As such, affect and the anticipation thereof may fuel and maintain justification induced self-regulation failure.

Motivated reasoning. While rationality was long assumed to be the end-product of our capacity to reason, and thus would lead to actions that are in favor of our own best (long-term) interest, it has been acknowledged for some time now that purely rational modes of reasoning can lead to suboptimal outcomes. For example, emotions are crucial for effective decision making (cf. Damasio, 1994) and unconscious thought has proved to be superior to conscious reasoning processes in certain circumstances (cf. Dijksterhuis & Nordgren, 2006). In fact, research has demonstrated that reason itself is not completely rational. That is, the truly objective reasoner does not exist. Instead our reasoning is biased by our motivations.

According to Kunda’s account of motivated reasoning (1990), people construct seemingly rational justifications for their desired beliefs. Consequently the information search is biased in favor of information that is consistent with the desired conclusions (Hsee, 1995; Kruglanski, 1980; Kunda, 1987, Sanitioso, Kunda, & Fong, 1990). This allows people to draw a conclusion they desire while maintaining an illusion of objectivity.

The notion that people attempt to construct justifications for beliefs they are motivated to hold can account for several phenomena. For instance, the motivation to see oneself as an extravert or introvert leads people to selectively access those memories that can justify the desired view. Similarly the self-serving bias (cf. Heider, 1958) is believed to be a product of people’s motivation to maintain one’s self-esteem, and a motivational bias lies at the root of unrealistic optimism (e.g., Weinstein, 1980).

Taking up a motivated reasoning account in the context of self-regulation failure would predict that when confronted with a tempting option, people will be naturally motivated to choose the hedonic alternative (Elliot, 2006; Okada, 2005), and are consequently motivated to find reasons that justify such a choice. Thus when Marcy is tempted by the forbidden cake she justifies her feelings by coming up with arguments in favor of having the cake (e.g., “This is an exceptional occasion, so I am not really breaking my diet”). As such, the reliance on justifications in self-regulation failure seems to be a classic example of motivated reasoning, where justifications are tinged by desire, rather than objective rational formulations. After all, if the reasoning process were to be truly objective, Marcy would be able to apply equally, if not more, compelling justifications for not eating the cake as they fit with her intentions and beliefs (e.g., “It is bad for my weight-loss regime”; “It is only a momentary pleasure”; “I will regret doing it”) and would thereby be in fact the more justifiable option from a rational perspective. Consistent with a motivated reasoning account, it seems that when people are motivated to arrive at a certain conclusion, such as having the cake, then even trivial and irrational reasons can increase the justifiability of a decision, even when these justifications are not compelling on their own. Thus, ironically, the evidence for motivationally

Chapter 2

constructed justifications suggests that in our attempts to appear rational we become irrational.

While a motivated reasoning account to explain a justification-based pathway to self-regulation failure is promising, it has never been experimentally tested in the context of self-regulation. However, findings from our lab do provide initial support for a motivated reasoning account by demonstrating that the justifiability of a forbidden pleasure is determined by its temptational strength (De Witt Huberts et al., 2012c). Ostensibly as part of the market introduction of a new snack, participants were asked to rate how tempted they were by a new type of chocolate bar. Afterwards in a thought listing procedure, supposedly to determine the marketing strategy of the product, participants had to indicate the reasons that would allow them to indulge in that particular food temptation. Participants could choose as many reasons as applied to them out of a list of 30 reasons. Results indicated that the degree of temptation (cf. how attractive yet forbidden the product was; Kroese, Evers, & De Ridder, 2011) determined the number of reasons participants applied to allow themselves the forbidden treat. In a subsequent study it was found that the motivational conflict elicited by the hedonic product also influenced active reasoning processes. Again participants were exposed to a tasty but unhealthy food temptation and this time were asked to generate reasons that would apply to them to indulge in that product. As in the first study, the degree to which participants were tempted by the product determined the number of reasons they construed to allow themselves the forbidden pleasure. In both studies the justifications referring to visceral factors that may be used as a reason to consume the product, such as appetite and hunger, were not included, thus purely measuring justifications rather than a biological necessity to consume the hedonic product. These findings suggest that the extent to which one feels tempted by a product, presumably by guiding reasoning processes, determines the amount of reasons one applies and construes in order to justify its consumption. Although the degree of temptation was not manipulated, instead relying on idiosyncratically determined temptation, these results do fit nicely with the concept of motivated reasoning.

While motivated reasoning is not rational in itself, it does seem to allow us to behave irrationally while maintaining a rational self-concept. Although this may in fact be an illusion as the reasons we rely on are trivial or irrational in themselves, the goal we may aim to achieve by means of applying justifications -retaining a self-concept as a reasonable person- may be achieved successfully by such a process. Several researchers have proposed that a justification-based pathway to self-regulation failure in fact relies on the boost in self-concept the prior justification gives.

Reinforced self-concept. In extension of the idea that justifications are construed in order to maintain an illusion of rationality it has been argued that

justifications exert their influence by counteracting the detrimental consequences of self-regulation failure to our self-concept. This premise is considered to be the underlying mechanism of moral licensing for which Monin and Miller (2001) introduced the concept of moral credentials. Monin and Miller maintained that licensing effects in stereotyping behavior arise because a prior act protected the individual's self-perception. That is, once people viewed themselves as non-sexist or non-racist individuals by a prior statement or endorsement, they felt free to act in a more stereotypically consistent manner. Relating this notion to self-regulation, a justification, which mostly involves something laudable about the self such as effort or a charitable deed, functions as some kind of credential that then serves as a license to choose an option that would otherwise create negative attributions for the self, such as acting against one's intentions. Indirect evidence for such a mechanism comes from studies by Mukhopadhyay and Johar (2007) and Ramanatan and Williams (2007) demonstrating that resisting temptation causes positive self-conscious emotions such as pride. Likewise, Mick and Faure (1998) demonstrated that pride and deservingness mediated the effects of achievement in self-gifting.

Evidence for this pathway was directly tested in the context of consumer research. As the purchase of luxuries is difficult to justify and induces greater guilt (Dahl, Honea, & Manchanda, 2003; Okada, 2005) they are considered to produce negative self-attributions. Having chosen a virtuous option beforehand can help establish credentials which in turn can serve as a justification to choose an option that otherwise would harm one's self-concept. Khan and Dhar (2006) directly tested whether an initial benevolent choice boosted self-concept that buffered against negative attributions associated with the second, indulgent, choice. After providing half the participants with a justification (signing up for community service) participants had to give self-assessments on four positive personality traits ('compassionate'; 'warm'; 'helpful'; 'sympathetic'). As expected, participants who had committed to an altruistic act rated themselves significantly more positive on the four attributes than participants without such a justification (Studies 1, 3, and 5). This boost in self-concept mediated the effect of the justification on willingness to choose an indulgent item (Study 5). However, providing participants with an external reason to perform the community service (for instance having to do community service for having committed a driving violation) attenuated the facilitating effect on indulgent choice. Presumably doing community service as punishment reversed the positive impact on self-concept.

A reinforced self-concept might explain the results from studies where one did not actually need to perform a benevolent act for a justification effect to occur. If merely thinking about, intending or planning a charitable act can lead to a more positive self-concept, then there is no need to execute one's optimistic plans to reap the benefits that enable one to indulge without the negative consequences.

However, findings from another line of studies by Mukhopadhyay and Johar (2009) suggest that a boost in self-concept is not necessary for prior laudable acts or decisions to bring about indulgent behavior. In their line of studies self-esteem was measured directly after the initial decision that was supposed to act as a justification (refraining from or giving in to an impulsive purchase). In contrast to the findings by Khan and Dhar (2006), no difference in self-esteem was found between participants that did exercise restraint in the prior decision and the participants that had failed to exercise restraint. They did find, however, that participants who had exercised shopping restraint in the first decision were more likely to choose the indulgent option afterwards, demonstrating the justification effect. Interestingly however, reminding participants of their self-esteem before the second choice also increased indulgence afterwards, even in participants without a justification. These findings thus suggest that both reminding one of one's self-concept without prior restraint, and thus without a justification, and restraining oneself without actually boosting self-esteem, could produce justification effects. The authors therefore concluded that a boost in self-concept is sufficient, but not necessary, to instigate indulgent choice (Mukhopadhyay & Johar, 2009).

While these findings may at first sight not be in line with the findings by Khan and Dhar (2006), they do not necessarily contradict each other. The justifications used in the studies by Khan and Dhar involved commitment to an altruistic act, which could have generated a stronger boost in self-concept than refraining from an indulgent purchase, as used by Mukhopadhyay and Johar (2009). While more research is needed to directly test the effect of the specific justifications on self-concept and the role of self-concept in self-regulation failure, the above findings suggest that there may be multiple pathways for justifications to instigate self-regulation failure.

Conclusion. In this paragraph we discussed several potential mechanisms that could explain a justification-based route to self-regulation failure. We would like to note that this list is by no means exhaustive. Other factors not reviewed here could possibly account for the effect that justifications have on self-regulation failure. Moreover as studies directly investigating the underlying mechanisms remain scarce, leaving only indirect evidence for the proposed mechanisms, the review highlights the need for more future research into the underlying mechanisms of justification induced self-regulation failure.

What's more, the many similarities and overlap between the various explanations suggest that a justification-based route to self-regulation failure is more likely to be determined in multiple ways. Which of these mechanisms ultimately determines the effect on self-regulation failure may to a great deal be determined by the circumstances. For example, a strengthened self-concept is more likely to explain the underlying mechanism when the justification involves some altruistic deed, which touches a key aspect of the self, rather than an

ephemeral justification such as not buying something. Also it is likely that in order for motivated reasoning processes to be instigated, one must feel a strong desire for a certain option, and thus already have been exposed to a temptation. Finally, individual differences such as guilt-proneness could affect whether a justification-based route is determined by anticipated or experienced affect. It thus appears that there are multiple routes from justification to self-regulation failure, and that the route is determined by various factors and conditions.

Besides questions about the underlying mechanisms fuelling the effect, the evidence for justification processes in self-regulation failure also raises questions about the conceptual implications of this novel pathway. For instance, the involvement of reflective processes in self-regulation failure raises the question whether the reliance on justifications is intentional. While this and many other questions need to be investigated empirically, we will discuss some tentative answers to this question based on theoretical considerations and the available (indirect) evidence.

The intentionality of the justification-based mechanism of self-regulation failure

The characteristics of justification processes fit with the propositions of reflective processing described by dual-process models in that it is strategic, cognitive and involves higher order processing, such as rule based reasoning and propositional and symbolic representations. In some dual-process models reliance on justifications is even an explicit characteristic of the reflective system (cf. Epstein, 1994). However, while the reflective-impulsive model, for example, explicitly states that the division of impulsive and reflective systems is not based on the presence or absence of awareness, and refrains from using awareness of the processes in both system as a distinctive criterion (Strack & Deutsch, 2004), in the application of such models to self-regulation the reflective system is generally assumed to hold our explicit preferences and intentions (e.g., Hoffman et al., 2009). As such, a discussion of how intentional the use of justifications in self-regulation failure is justified, especially since the evidence for the intentionality of the process is inconsistent.

On the one hand, focus group studies indicate that people are aware of using justifications to indulge and report doing so intentionally (e.g., Mick & Faure, 1998; Mukhopadhyay & Johar, 2009; Xu & Schwarz, 2009), just like introspection reveals that allowing oneself a forbidden pleasure often involves some active argumentation. While on the other hand, surprisingly, in experimental studies providing evidence for the importance of reasons in indulgent behavior, the assumed justification processes in these studies have not been demonstrated explicitly. Instead, in most studies investigating justification processes, the

backbone of the process - seeking and constructing reasons to justify prospective lapses - has remained implicit.

For instance, in most of the aforementioned studies participants were provided with, rather than having to construct, a reason that justified subsequent hedonic consumption. What's more, the provided justifications remained implicit, for example by making participants think they did a certain task twice rather than explicitly alluding to the extra effort they exerted (De Witt Huberts et al., 2012a), or by presenting the justification cue and consumption as unrelated in two separate tasks (e.g., Kivetz & Zheng, 2006; Mukhopadhyay & Johar, 2009). It has even been suggested that justification processes can occur by relying on some kind of heuristic (e.g., "I deserve a treat after effort") or without awareness (e.g., Fishbach & Dhar, 2005; Khan & Dhar, 2006). In fact the literature on moral licensing contends that the moral credits and credentials (Monin & Miller, 2001) exert their influence via an implicit mechanism that results in a strengthened self-concept which allows the transgression of moral norms. A similar explanation is endorsed in consumer research (e.g., Khan & Dhar, 2006). It is assumed that the justification boosts the person's self-concept and thereby liberates the person to behave indulgently. These findings suggest that a justification-based mechanism operates outside the person's awareness and thereby cannot be qualified as intentional.

Nevertheless, even though several studies suggest that justifications can eventually lead to self-regulation failure without intention, it is most likely that initially they had a component of awareness in them (cf. Metcalfe & Mischel, 1999; Strack & Deutsch, 2004), even more so as people often report needing a justification to allow them a forbidden pleasure (Mick & Demoss, 1990; Xu & Schwartz, 2009). Moreover, a range of findings accounted for by a justification-based mechanism suggest the involvement of higher order reasoning processes that must involve some degree of intentionality. An example being the finding that justifications can be outside the domain of the behavior that is being justified. For example prior shopping restraint serving as justification to allow oneself a tasty ice cream, requires that one is able to extract the implication of that prior behavior on a more abstract level and therefore must involve some degree of intention. More direct evidence in support of the intentional use of justifications is the finding by Mukhopadhyay and Johar (2009) that salience of the justification mediated its effect on subsequent indulgence. As an intentional account of justification requires that the consumer makes a connection between the justification and the indulgent choice, the justification needs to be salient. In their study participants were provided with a justification (prior shopping restraint) and consistent with a justification-based mechanism they found that the justification increased hedonic choice in the second task. However, the classical justification effect disappeared when the salience of the prior restraint was mitigated by a 15 minute filler task before the indulgent choice. Likewise, it was found that an emotional event only

induced indulgent behavior when participants were highly aware of that negative event. Participants who were less aware of the emotional event did not increase their hedonic consumption compared to a control group (De Witt Huberts et al., 2012b).

Furthermore, the evidence that people actively construe justifications when confronted with a motivational conflict (De Witt Huberts et al., 2012c) also suggests that intention is involved. Relatedly, a recent study demonstrated compellingly that justifications can be used strategically and intentionally to license moral transgressions. In this study participants were asked to consider two job applicants, of which one was Black and one was White, knowing that 24h later they would be asked to choose one to hire. After seeing the candidates, but before reporting their decision, participants had to read behavior descriptions and indicate whether these ambiguous behaviors were racist or not. When the White applicant was more qualified, and thus the logical decision would be to hire the White applicant, participants described more of the ambiguous behavior descriptions as racist. It seems that in anticipation of choosing the White applicant, which could raise concerns about appearing racist, people behaved in ways that would counter this attribution (Merritt, Fein, Sativsky, Tuller, & Monin, 2012). Thus having a justification can not only lead us to violate our intentions, but also anticipating such a violation leads people to strategically behave in ways that could justify that behavior. This suggests that justifications are pursued in a very strategic manner that exceeds basic automatic processes.

Although these findings provide arguments in favor of the deliberated use of justifications, the evidence remains indirect. The fact that explicit justifications are difficult to investigate could account for the lack of direct evidence. For example, asking participants to justify consumption in situ, might elicit reactivity or elude socially desirable answers, as justifications can have the negative connotation of being excuses for one's undesirable behavior, something people presumably do not like to exhibit. Moreover, it seems likely that the justification processes people rely on are intrapersonal in their nature and take the form of self-talk or licensing thoughts, rather than explicitly stating the justification. The latter could emphasize the sometimes inconsistent justifications people rely on, thereby challenging their power. The literature on justification processes in self-regulation failure may therefore be biased as it may be easier to study implicit processes underlying the mechanism than explicit justification processes. New ways to unobtrusively investigate justification processes would therefore enable a more straightforward interpretation of the intentionality of the process.

On a final note, we would like to stress that the arguments in favor and against the intentionality of justification induced self-regulation failure do not necessarily rule each other out. For example, repeated co-occurrence of justifications and goal violations could automatize the behavior in such a way that

justifications now even have the power to elicit indulgence without explicit intention. In other words, after repeatedly relying on justifications to indulge, merely having a justification could signal that indulgence is allowed and make hedonic cues in the environment more salient, perhaps even in an automatic way. Eventually, this heightened salience could eventually motivate people to seek out indulgent experiences. Such automatization of initially reflective processes has been considered by several dual-process models (e.g., Metcalfe & Mischel, 1999; Strack & Deutsch, 2004).

Tentative support for this assumption comes from our own lab in a line of studies that demonstrated that justifications related to work, effort and entitlement are cognitively linked to hedonic concepts in restrained eaters (De Witt Huberts, Evers, & De Ridder, 2012d). After being exposed to a justification in a priming task, restrained eaters reacted faster to words designating indulgence and exposed an attentional bias towards hedonic products. Crucially, the effect was only found for restrained eaters but not for people scoring low on restraint. As people high in restraint have a strong intention to restrict their food intake yet at the same time repeatedly fail at doing so (e.g., De Witt Huberts, Evers, & De Ridder, 2012e; Stice, Fisher, & Lowe, 2004), restrained eaters seem particularly likely to repeatedly rely on justifications to justify their lapses. Therefore, the finding that justifications make restrained eaters, but not unrestrained eaters, more attentive to hedonic stimuli, provides initial evidence for the notion that repeatedly relying on justifications to allow oneself a forbidden pleasure could eventually cause justifications to facilitate indulgence on a more automatic level.

Of course, such a conditioning effect and its effects on behavior need to be tested directly. What this discussion makes clear however, is that in order to get more insight in the determinants of self-regulation failure one must look beyond the reflective–impulsive distinction.

Conclusion

Notwithstanding the many questions that remain about the factors and mechanisms determining a justification-based pathway, the findings reviewed and analyzed in the present paper reveal that justification processes have been underappreciated as an explanation for self-regulation failure. The reviewed findings not only demonstrate that a justification-based pathway is an important and common route to self-regulation failure, but also reveal how easily inclined people are to rely on justifications; sometimes feeling entitled to indulge even after an imagined justification. Therefore, to capture the full scope of processes underlying self-regulation failure, it is crucial to put such a reflective route to goal-derailment on the map.

Acknowledging a justification-based account as an explanation for self-regulation failure also has important conceptual implications for classic models of

self-regulation. Firstly, the novel route outlined in this paper suggests that self-regulation failure is not by default the result of the impulsive system taking precedence over the reflective system as has often been inferred. Instead the reviewed evidence indicates that even when people have the resources and capacity to act in accordance with long-term goals, they may not always act upon them when there is a justification to do so. Secondly, by suggesting that reflective processes in themselves are a potential liability for self-regulation, a justification-based account questions the general assumption of self-regulation models that the reflective system serves to correct mistakes in the impulsive system. Integrating these insights in models of self-regulation could advance the understanding of self-regulation failure.

Together, the insights derived from the present analysis sketch out important avenues for future research. For instance, the underlying mechanism of a justification-based pathway needs to be explored. Furthermore, an investigation of the factors that determine which road (justification-based or impulsive) is taken when self-regulation fails, is warranted by these novel insights. For the same reasons, it is important to uncover when reflective processes contribute to resistance and when they make us yield to temptation.

It appears that explanations for the self-defeating behavior of Mark, Marcy and Sally may have concentrated too much on the impulsive system being responsible for self-regulatory failure and the reflective system producing success. The present analysis shows that moving beyond this dualistic explanation may provide a better understanding of why they failed to act in line with their intentions. Thereby, a more comprehensive view of self-regulation could contribute to interventions that target such maladaptive behavior more effectively.

Chapter 3

Thinking before sinning: Temptations elicit justification processes

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De Witt Huberts, J.C., Evers, C., & De Ridder, D.T.D. Thinking before sinning:
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Abstract

Whereas self-regulation failure is often labeled as impulsive, findings from self-licensing research suggest that people sometimes rely on reasons to allow themselves to violate their long-term goals. Based on these findings we propose that temptations can trigger justification processes that could facilitate gratification in a more deliberate manner. Two studies investigated whether temptations elicit justification processes. Participants were exposed to a food temptation after which passive (Study 1) and active (Study 2) reasoning was assessed. Higher levels of temptation predicted the number of reasons employed and construed to justify consumption. These findings support the assumption that temptations not only exert their influence by making us more impulsive, but can also facilitate gratification by triggering deliberative reasoning processes.

Temptations by definition invoke conflict: appealing to our indulgent inclinations while simultaneously signalling a breach of our long-term goals (e.g., Ainslie, 1975; Kroese, Evers, & De Ridder, 2011). Thus, people may inherently be inclined to pursue the temptation, but often will only do so when the situation allows them to justify the violation of personal standards or goals (Khan & Dhar, 2006; Kivetz & Simonson, 2002; Kivetz & Zheng, 2006). Consequently, people are motivated to find reasons that justify abandoning their self-set rules and goals. As such, rather than elicit impulsive actions as is conceptualized in many dual-process models of self-regulation (e.g., Metcalfe & Mischel, 1999; Strack & Deutsch, 2004), confrontation with temptations may also elicit reasoning processes. Such self-licensing, or the tendency to rely on reasons and arguments to justify indulgence, challenges the view propagated by these dual-process models that rational and deliberate processes generally foster adherence to our long-term goals. Although self-licensing assumes the involvement of reasoning processes, this has not yet been demonstrated explicitly. The aim of the current paper is therefore to establish whether people indeed deliberate in order to allow themselves an otherwise forbidden pleasure, thereby providing evidence for the involvement of reasoning processes in indulgent behavior.

Self-licensing

The concept of self-licensing is based on findings from decision-making research that people are more likely to make a choice that can easily be justified (Shafir, Simonson, & Tversky, 1993). As the need to choose often creates conflict, decision makers seek and construct reasons in order to resolve the conflict and justify their choice (e.g., Kivetz, 1999; Simonson, 1989; Shafir et al., 1993). When confronted with a typical self-regulation dilemma of gratifying immediate desires versus the pursuit of long-term benefits, people will in many cases be inclined to pursue the hedonic option but will be less likely to do so when the situation makes it difficult for them to justify it (Kivetz, 1999; Okada, 2005). Thus, sometimes indulgence is not determined by one's capacity to control oneself, but rather by the availability of reasons that one has to justify the prospective indulgence (e.g., De Witt Huberts, Evers, & De Ridder, 2012a).

Self-licensing processes in self-regulation have been afforded quite some attention in the domain of moral behavior, where people whose past behavior (e.g., acting in a non-prejudiced way) provides them with some kind of moral credentials that license them to subsequently behave in a way that violates these principles (e.g., voicing prejudiced opinions; Monin & Miller, 2001; Efron & Monin, 2010). In recent years the accumulated empirical evidence indicates that self-licensing processes also contribute to consumer behavior, demonstrating that providing people with a justification, such as effort (Kivetz & Zheng, 2006), achievement (Mick & Faure, 1998; Kivetz & Zheng, 2006), altruism (Khan & Dhar, 2006), or prior

restraint (Mukhopadhyay & Johar, 2009) leads to a preference for hedonic over functional choice (e.g., Kivetz & Zheng, 2006; Khan & Dhar, 2006) as well as hedonic overconsumption (De Witt Huberts et al., 2012a). For example, participants who had to imagine volunteering in community service were more likely to subsequently purchase a hedonic item (luxury jeans) over a functional one (vacuum cleaner; Khan & Dhar, 2006). Similarly, participants who were under the impression of having exerted more effort consumed more hedonic snacks compared to participants believing their equally exerted effort did not exceed the norm (De Witt Huberts et al., 2012a).

While these studies provide evidence for the importance of reasons in indulgent behavior, the assumed justification processes in these studies have not been demonstrated explicitly. In studies investigating self-licensing processes, the backbone of the process

-seeking and constructing reasons to justify prospective indulgent behavior- has remained implicit. For instance, in the aforementioned studies participants were provided with, rather than having to construct, a reason that justified subsequent hedonic consumption. What's more, the provided justifications remained implicit, for example by making participants think they did a certain task twice rather than explicitly alluding to the extra effort they exerted (De Witt Huberts et al., 2012a), or by presenting the licensing cue and consumption as being unrelated in two separate tasks (e.g., Mukhopadhyay & Johar, 2009; Kivetz & Zheng, 2006). It has even been illustrated that self-licensing processes can occur by relying on some kind of heuristic (e.g., "I deserve a treat after effort") or without awareness (e.g., Kivetz & Zheng, 2006; Khan & Dhar, 2006).

Whilst these studies convincingly demonstrate how engrained self-licensing is in our behavioral repertoire, seemingly relying on heuristics and learned automatic associations, to our knowledge it has not yet been demonstrated whether being confronted with a temptation can indeed induce seeking and construction of justifications, thereby tempering the assumption that self-licensing is a reasoned process. To date, only two studies have attempted to explicitly capture the reasoning processes involved in justifying indulgence (Khan & Dhar, 2006; Mukhopadhyay & Johar, 2009), yielding mixed results: one study finding that the justifications people put forward mediated the relationship between prior restraint and indulgent choice (Mukhopadhyay & Johar, 2009; Study 1) while another study found that people were not aware of applying justifications to indulge (Khan & Dhar, 2006; Study 2). On a more indirect level, a study on compensatory beliefs found that compensatory intentions ("I eat this cookie now, but I cut back later") -which could be seen as a sort of justification- are associated with the decision to indulge amongst dieters (Kronick & Knäuper, 2010). More importantly, besides these contradicting results, all these studies inquired into the use of justifications *after* the indulgence had taken place, thereby hindering conclusions

about a priori deliberation processes that would facilitate gratification, and leaving open the possibility that participants were applying a justification in hindsight as dissonance reduction (e.g., Festinger, 1957) or reporting a general belief that indulgent behaviors need to be justified (Xu & Schwarz, 2009).

This lack of explicit evidence for the justification process is surprising, not only as introspection tells us that we sometimes actively seek and construct reasons when confronted with a tempting choice (e.g., Mick & Demoss, 1990). But also, and more importantly, the very process of self-licensing, applying a reason that justifies a departure from one's long-term goals, suggests that there must be some active argumentation involved that fosters such a strategic decision. The aim of the current paper is therefore to ascertain justification processes explicitly, thereby providing credence to the observation that deliberative and reflective processes can facilitate indulgent behavior.

To investigate this, we provided weight-conscious participants with an attractive but goal-threatening product, a chocolate bar, and measured passive as well as active engagement in reasoning behavior. We hypothesized that when the lure of the temptation, and thus the need for justification, is larger the more likely people are to engage in justification processes. More specifically, we predict that the more one is tempted by the forbidden product, the more reasons one will employ to justify subsequent consumption (Study 1). Moreover, we predict that exposure to a temptation will not only stimulate employment of available reasons, but will lead to active construction of justifications (Study 2).

Study 1

Method

Participants. Sixty female university students who were watching their weight participated in this study for course credit or €4,-. Female participants were recruited as they experience food more as a self-regulatory dilemma than males (Grogan, Bell, & Conner, 1997). This makes them more likely to use justifications for indulging in highly caloric food. This assumption was corroborated by the finding that all participants responded positively to the question: "Are you currently watching your weight?" One participant who was an outlier ($SD > 3$) on the independent variable and one who did not comply with the instructions were removed resulting in a final sample of 58 participants with a mean age of 20.21 ($SD = 2.02$).

Procedure. The study was presented as a marketing study for a large retail concern conducted by the university's business school. The participants were seated behind a table with the hedonic snack product (a luxurious chocolate bar) that remained covered until participants were instructed to remove the cover to evaluate the product. The goal and purpose of the study were presented in a booklet, explaining that the producer, as part of the market introduction of a new

product, was interested in the evaluation of this product by the target group of students aged 18-30. The participants had to indicate how tempting they found the snack, among other filler items assessing the attractiveness and their willingness to try the product. After completing this part of the evaluation, the participants then read instructions that the snack was intended as an indulgence and that, as information for the marketing strategy, the producers wanted to know when and for what reasons the target group would allow themselves this particular hedonic snack. On the following page the participants could indicate the reasons for having this product that applied to them out of a list of random reasons. It was explicitly alluded to that they could tick off as few or as many reasons as long as it applied to them. Finally, demographic variables were asked before participants were reimbursed for participation.

Materials.

Hedonic product. In line with the cover story the temptation consisted of a recently launched luxurious chocolate bar by a well-known brand.

Temptingness. Participants were asked to indicate to what extent they perceived the product as tempting on a seven point Likert scale ranging from 1 (*not at all*) to 7 (*very much*). This item was presented among filler items assessing how likely they were to buy the product, how much they were willing to pay for the product, and how willing they were to try the product.

Hunger. As food consumption is largely determined by hunger and appetite, participants had to indicate their levels of hunger and appetite on seven point Likert scales (1 *not at all*-7 *a lot*) that were combined into a single measure of *hunger*, (Cronbach's $\alpha = .88$) to control for the effect of hunger on the temptingness of the product.

Justifications. As an explicit measure of the justification processes involved in self-licensing, participants could indicate the reasons that applied to them for indulging in the hedonic product out of a list 30 reasons. The list of justifications consisted of variations of well-known justification cues such as effort (De Witt Huberts et al., 2012a; Kivetz & Zheng, 2006), achievement (Mick & Demoss, 1990; Kivetz & Zheng, 2006), and altruism (Khan & Dhar, 2006). Examples of justifications are: "Because I have just had a busy period"; "Because I have something to celebrate" and "Because I feel bad today". Visceral factors that may be used as a reason to consume the product, such as appetite and hunger were not included, as these factors physiologically determine food intake and constitute a biological necessity to consume the hedonic product, rather than a justification. Participants were also provided with the opportunity to add a reason if they had a reason to indulge that was not included in the list. The sum of justifications was used as a measure of reasoning to indulge.

Results

Descriptives. Table 1 shows the means, standard deviations and intercorrelations of the variables under study. Generally the participants rated the chocolate bar as tempting ($M = 5.86$, $SD = .67$) with scores ranging from 3 to 7. Participants indicated on average 10.48 ($SD = 6.10$) reasons to consume the hedonic chocolate bar. None of the participants added a reason that was not yet included in the list. The most frequently utilised reasons were: “I have something to celebrate” (65%); “I have exerted effort for something important” (58%), and “I deserve a reward” (56%).

Table 1 Study 1: Means, Standard Deviations, and Correlations

	1	2	3
Hunger (1)	-		
Temptingness (2)	.19	-	
Number of justifications (3)	.07	.32*	-
<i>M</i>	3.74	5.88	10.48
<i>SD</i>	1.49	.73	6.10

* $p < .05$

Main analysis. A hierarchical regression analysis was performed to determine whether temptingness predicted the number of justifications participants employed to justify consumption. In the first step hunger was included as a control variable. In the second step temptingness was entered as predictor. As can be seen in Table 2, the first step did not reach significance, $p = .58$. In the second step temptingness of the hedonic product significantly predicted the number of reasons, $p = .02$, explaining 10.4% of the variance (unadjusted). The hypothesis that temptingness predicted the application of justifications was therefore confirmed.

Table 2 Study 1: Hierarchical Multiple Regression Analysis for Number of Justifications

Number of justifications			
	β	ΔF	ΔR^2
Step 1			
Hunger	.07	.31	.01
Step 2			
Temptingness	.32*	6.04*	.10

* $p < .05$

Discussion

The results of Study 1 confirmed that subjective evaluation of temptation strength predicts the employment of justifications. These results suggest that reasoning processes that could facilitate gratification may already take place *before* prospective indulgence. Whilst the current studies explicitly demonstrate the justification processes people employ when confronted with temptation, a limitation is that participants were provided with justification cues, not allowing for any conclusions about self-generated justifications and thus actual active reasoning behavior in the face of temptation. This limitation was addressed in Study 2, thereby more stringently testing whether exposure to temptation indeed elicits active reasoning processes.

Study 2

To investigate whether temptations elicit active engagement in reasoning processes, Study 2 required participants to construe reasons to justify prospective indulgence. In addition, the assumption that only temptations that constitute a threat to one's long-term goal elicit justification processes was more strictly controlled for in Study 2. To provide a more stringent test of our assumption that licensing primarily occurs in people who experience a motivational conflict, we only included female participants who indicated that the chocolate temptation constituted a threat to their personally relevant long-term goal (i.e. weight management).

Conform our hypothesis that temptations can encourage reasoning processes, we predict that the more tempting the hedonic product was to the participants the more reasons they would come up with to justify subsequent indulgence.

Method

Participants. Thirty-seven female university students participated in this study for course credit or €4,-. Only participants who assigned high importance to healthy eating and found the product to be interfering with these goals (thus scoring ≥ 3 on both scales ranging from 1 to 7) were included in the analyses. One participant who did not meet the criteria was excluded from analyses, resulting in a sample of 36 students with a mean age of 19.63 ($SD = 4.07$).

Procedure. The procedure was similar to the one employed in Study 1 except that this time participants were asked to actively come up with personally relevant reasons that would allow them to consume the hedonic product. Afterwards, together with filler items such as frequency of buying and consuming snacks, participants were asked to indicate how relevant weight management was to them and how threatening they perceived the chocolate bar to be to this goal in order to ensure that licensing was indeed necessary.

Materials.

Hedonic product. The tempting product was similar to the one used in Study 1.

Hunger. Again the mean scores of hunger and appetite were combined into a *hunger* score (Cronbach's $\alpha = .88$) to serve as control variable.

Temptingness. Participants had to indicate how tempting they perceived the product to be on a seven point Likert scale ranging from 1 (*not at all*) to 7 (*very much*). This item was presented among filler items assessing how likely they were to buy the product and how much they were willing to pay for the product.

Justifications. Instead of being provided with justifications, participants were asked to write down the reasons they would have to consume the tempting product. Similar to Study 1, participants read the instruction that the retail concern was interested in the reasons people have to eat an indulgent product and were given two examples of such reasons. The participants could then write down as many or as few reasons as they could come up with to subsequently consume this product. Again it was emphasized that it did not matter how many reasons they came up with, as long as they were personally relevant. For similar reasons as in Study 1, visceral reasons such as hunger or appetite were not included in the final score. The total number of reasons participants came up with to consume the product was used as an indicator of reasoning to indulge.

Goal relevance. To control for goal relevance participants were asked to indicate how important weight management was for them ("Do you watch your weight?") and how threatening they deemed the chocolate product to be to their weight management goal ("How bad is the product for maintaining your ideal weight") on seven point Likert scales ranging from 1 (*not at all*) to 7 (*very much*).

Results

Descriptives. Table 3 shows the means, standard deviations and intercorrelations of the variables under study. 16.77 % of the total amount of self-generated reasons involved hunger or appetite (e.g., "Because I have a chocolate craving"; "Because I'm hungry") and were not included in the measure of justification. The following analyses are thus based on the remaining 83.23% of the self-generated reasons that actually constituted justifications. Participants on average came up with 3.94 ($SD = 2.67$) justifications to consume the hedonic chocolate bar. Examples of reasons are "After a day of studying hard"; "Because I have finished/passed my mid-terms"; "To make it a special evening with my (boy)friend". The mean score of temptingness was 5.55 ($SD = 1.65$), showing a wide variety of scores ranging from 1 (*very low*) to 7 (*very high*). The participants attached a medium to high importance to achieving and maintaining a healthy weight, 4.9 ($SD = 1.14$) and considered the chocolate product as interfering with that goal with a mean score of 6.5 ($SD = .65$) on how bad for weight management they perceived the chocolate product to be.

Table 3 Study 2: Means, Standard Deviations, and Correlations

	1	2	3
Hunger (1)	-		
Temptingness (2)	.01	-	
Number of justifications (3)	.05	.45**	-
<i>M</i>	4.01	5.56	3.94
<i>SD</i>	1.60	1.65	2.61

** $p < .01$

Main analysis. A hierarchical regression analysis was performed to determine whether temptingness predicted the number of reasons participants constructed to justify consumption. In the first step hunger was included as control variable. In the second step temptingness was entered as predictor. As can be seen in Table 4, the first step did not reach significance, $p = .75$. In the second step, subjective temptingness of the hedonic product significantly predicted the number of reasons participants construed, $p = .02$, explaining 20.4% of the variance (unadjusted). Participants who were more tempted by the chocolate product constructed more reasons to indulge.

Table 4 Study 2: Hierarchical Multiple Regression Analysis for Number of self-generated Justifications

	Number of justifications		
	β	ΔF	ΔR^2
Step 1		.09	.00
Hunger	.05		
Step 2		8.33**	.20
Temptingness	.45**		

** $p < .01$

Discussion

Study 2 demonstrated that when tempted people actively construe reasons and justifications to indulge in that forbidden pleasure. To our knowledge this study constitutes the first demonstration of actively engaging in justification processes when confronted with a self-regulation dilemma, lending further support to the concept of self-licensing.

General discussion

The current studies established explicit self-licensing processes and demonstrate that people not only apply justifications made available to them to indulge, but they also actively construe justifications in the face of temptation. This suggests that temptations not only exert their power by eliciting impulsive reactions, but also induce reasoning processes that may facilitate indulgent behavior.

These results challenge the prevalent idea that deliberation and reflection always foster goal-directed behavior by allowing us to overcome the stimulus-control of temptations, as is suggested by dual-process models of self-regulation (e.g., Metcalfe & Mischel, 1999; Strack & Deutsch, 2004). Instead, these findings indicate that temptations also can exert their influence via the reflective or 'cool' system, suggesting that self-regulation failure is not exclusively the result of impulsive processes. The current results thus offer a novel point of view for the conceptualization of self-regulation failure, that might have a familiar appeal to many of us, yet is not incorporated in theories of self-regulation (e.g., Baumeister & Heatherton, 1996; Metcalfe & Mischel, 1999; Strack & Deutsch, 2004).

Despite this novel contribution, a few issues remain to be explored. Firstly, future research should incorporate previous findings on self-licensing with the current evidence for explicit justification processes to establish to what extent the observed reasoning processes can stimulate actual indulgent behavior. As human behavior is influenced by many factors simultaneously, it could very well be that additional factors inhibit the premeditated indulgent behavior ultimately. Nevertheless, as prior research into self-licensing has already demonstrated that even being provided with a single reason can facilitate indulgent behavior, it seems likely that the construction of justifications as is currently observed would produce similar effects.

Relatedly, because the current studies used the number of reasons as a quantification of justification processes, the next step would be to examine whether the number of reasons is the crucial connection between justification and behavior. To discern whether the quantity, the quality, or an interaction between the two, is decisive for the translation from justification to indulgence is something that should be explored in future studies.

A limitation of the current studies is the cross-sectional nature of the design. Temptation strength should be manipulated in future studies to establish their causal role in the justification process. This, however, raises the question of how temptingness could be manipulated adequately without eradicating the temptation strength altogether. Possibilities are manipulating temptation strength itself (e.g., weak and strong temptations; Kroese et al., 2011) or varying the degree of goal-threat a temptation constitutes. Despite the lack of causal inferences, the current studies have the advantage that subjective temptation was assessed, thus

capturing the seductive power of the temptations more accurately, as temptations tend to be idiosyncratically determined rather than generally established; something that is also reflected by the varying ratings of temptingness in the present studies of a universally acknowledged temptation such as chocolate.

A potential limitation is that the justifications participants had to give were hypothetical. That is, they had to indicate what would be a justification for them to consume that product, but they did not have to justify actual consumption at that moment itself. However, asking participants to justify consumption in situ, might have elicited reactivity or eluded social desirable answers, as justifications can have the negative connotation of being excuses for one's undesirable behavior, something people presumably do not like to exhibit. Inquiring specifically after the justifications people tend to use as part of a consumer study, thereby acknowledging that it is a common process, probably allowed for a more free and honest reflection of the justifications people apply.

Similarly, the current studies did not establish spontaneous justification processes, but required the participants to come up with justifications. We deem it quite difficult however to establish explicit self-licensing processes spontaneously, as again this would be burdened by the inhibiting influence of social desirability when having to explicitly name the justifications one uses. It seems more likely that the licensing processes people rely on are intrapersonal in their nature and take the form of self-talk or licensing thoughts, rather than explicitly stating the justification. The latter could emphasise the sometimes inconsistent justifications people rely on, thereby challenging their power. Therefore, seeing the strong effect of temptation on the justifications people apply and construe when the prospective consumption is hypothetical and under the social constraints posed by a lab study, suggests that the effect may be even stronger in daily hedonic behavior, where one mainly has to justify one's goal-violating behavior to oneself and not necessarily to others.

Despite the issues in need of further exploration, the finding that people actively engage in reasoning processes to justify prospective indulgence brings new light to the conventional conceptualization that temptations trigger impulsive processes. While it has previously been demonstrated that temptations not necessarily lead to gratification, but that confrontation with temptation can also automatically reinstate one's long-term goal (e.g., Fishbach, Friedman, & Kruglanski, 2003; Kroese, Evers, & De Ridder, 2009), these findings demonstrate that temptations do not always elicit automatic reactions, but can also induce reflective processes that can contribute to indulgent behavior.

Chapter 4

License to sin: Self-licensing as a mechanism underlying hedonic consumption

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Abstract

Hedonic overconsumption is often considered to be caused by impulsive factors. The current paper investigates whether self-licensing, relying on reasons to justify subsequent gratification, can also be included as a significant contributor to hedonic consumption. Two studies were conducted to investigate whether self-licensing can account for an increase in hedonic consumption while ruling out impulsive factors such as resource-depletion, negative affect and visceral state as alternative explanations. A pilot study indicated that perceiving oneself as having invested greater effort and thus having a self-licensing cue did not lead to a decline in self-control capacity compared to not having a self-licensing cue. The main study employed the same procedure and established that having a licensing cue did lead to increased snack intake while controlling for impulsive factors. Together, these studies support the notion that self-licensing is a separate mechanism leading to hedonic gratification independent of impulsive factors.

Modern society increasingly appeals to our ability to regulate our hedonic tendencies. The availability and affordability of hedonically tempting but harm-causing goods, such as tasty but unhealthy food, alcohol, tobacco and other consumer goods, requires people to exert self-control on a daily basis. However, people do not seem to be very effective in resisting the constant confrontation with these temptations, which is reflected in the increasing prevalence of obesity (Flegal Carroll, Ogden, & Johnson, 2002), binge drinking (Wechsler, Lee, Nelson & Kuo, 2002), and the emergence of new maladaptive behavior patterns such as internet addiction (Padilla-Walker, Nelson, Carroll, & Jensen, 2010). It is therefore not surprising that a great deal of research has been devoted to the factors that contribute to hedonic overconsumption, such as attitudes and beliefs (Ajzen, 1991), social norms (Terry & Hogg, 1996), risk perceptions (Rogers, 1975), reward sensitivity (Saelens & Epstein, 1996), and personality traits (Conner & Abraham, 2001).

In the past decade the research domain has shifted its focus to the role of impulsive factors in undermining our self-control abilities such as visceral states (Loewenstein, 1996), emotions (Tice, Bratslavsky, & Baumeister, 2001), cognitive capacity (Hofmann, Gschwender, Wiers, Friese, & Schmitt, 2008), and self-control resources (Muraven & Baumeister, 2000). While the view that desires and temptations impair our self-control abilities is now firmly established within self-regulation research (Baumeister & Heatherton, 1996; Metcalfe & Mischel, 1999) and society as a whole (cf. the false hope model by Polivy & Herman, 2002), common sense suggests that an impulsive breakdown of the self-control system is not the only route to hedonic indulgence. Contrast for instance the relaxed and carefree holiday maker with the busy and stressed manager. Both indulge in a scrumptious chocolate sundae after dinner, despite their intention to lose weight. While the manager's self-control resources have been weakened after a day of making difficult decisions, this would hardly be the case for the holiday maker who has been basking in the sun all day. Despite having the self-control capacity to avert indulgence, the holiday maker may still abandon his or her goals by using a justification (e.g., "I'm on holiday after all") that allows this person to indulge. This example implies that sometimes people actively relent their self-control efforts, rather than lose self-control, by relying on justifications to permit themselves an otherwise forbidden pleasure. Such self-licensing, or the tendency to rely on reasons and arguments to justify subsequent gratification, has received surprisingly little attention within research into hedonic consumption.

The aim of the present paper is therefore to investigate whether self-licensing can contribute to hedonic (over)consumption, thereby exploring more deeply the observation that hedonic (over)consumption in some cases is not the consequence of impulsive factors, but the result of more reasoned processes.

Self-licensing

The concept of self-licensing contends that people are more likely to choose hedonic goods when the decision context allows them to justify the consumption (Kivetz & Simonson, 2002; Kivetz & Zheng, 2006; Khan & Dhar, 2006). Indeed, people may rely on justifications for their indulgent behaviors; ex-smokers who allow themselves to have a cigarette during a particularly stressful period or dieters permitting themselves a supersized fast food dinner after a difficult exam. As the key feature of self-licensing lies in permitting oneself an otherwise disallowed pleasure, self-licensing is a relevant candidate for explaining all kinds of hedonic consumption.

Self-licensing is based on the finding from decision-making research that people are more likely to make a choice that can easily be justified (Shafir, Simonson, & Tversky, 1993). As the need to choose often creates conflict, decision makers seek and construct reasons in order to resolve the conflict and justify their choice (e.g., Kivetz, 1999; Shafir et al., 1993; Simonson, 1989). When confronted with a typical self-regulation dilemma of gratifying immediate desires versus the pursuit of long-term benefits, people will in many cases be inclined to pursue the hedonic option, but will be less likely to do so when the situation makes it difficult for them to justify it (Kivetz, 1999; Okada, 2005). Thus, sometimes indulgence is not determined by one's capacity to control oneself, but rather by the availability of reasons that one has to justify the prospective indulgence.

Self-licensing processes in self-regulation have been afforded quite some attention in the domain of moral behavior, where people whose past behavior (e.g., acting in a non-prejudiced way) provides them with some kind of moral credentials that license them to subsequently behave in a way that violates these principles (e.g., voicing prejudiced opinions; Effron & Monin, 2010; Monin & Miller, 2001). However, in empirical explanations for hedonic overconsumption, licensing processes, despite their apparent suitability to explain hedonic behavior, have received considerably less attention. Most evidence that the presence of reasons or justification cues indeed facilitate indulgent choice comes from consumer research (e.g., Khan & Dhar, 2006; Mukhopadhyay & Johar, 2009). For example, having invested greater effort increased the likelihood of choosing relative vices over virtues (e.g., a 'rich, delicious chocolate cake' over a 'low-calorie, seasonal fruit salad'). These findings were found both when the actual effort or relative effort (when compared to others) was manipulated (Kivetz & Zheng, 2006). In the same vein, several studies suggest that prior restraint can serve as a justification for subsequent indulgence. For instance, participants were more likely to choose an indulgent chocolate cake over a non-indulgent fruit salad when they were instructed to think of a prior instance where they had exercised restraint by not buying an attractive product (Mukhopadhyay & Johar, 2009).

These findings suggest that having a justification can lead to a preference for vice over virtue. Although promising, there remain some unresolved questions that need to be addressed before drawing firm conclusions about self-licensing as an additional mechanism underlying indulgent behavior. Most importantly, to date, the self-licensing mechanism has mainly been studied with respect to *choices* between virtue and vice, mostly even hypothetical choices without any actual consequences. While these findings have demonstrated that self-licensing leads to more hedonic choices, this does not necessarily mean that self-licensing contributes to an increase in indulgent behavior. There are several reasons to assume that self-licensing might not automatically translate from decision making to hedonic behavior.

Firstly, self-licensing is likely to be an integral part of the decision making process in choices between virtue and vice, as seeking and constructing reasons resolves the decisional conflict. However, in most cases of hedonic overconsumption the decisional conflict, and thereby possibly the reliance on justifications, is less outspoken. Particularly as in the prior studies investigating licensing processes in decision making, choices were pitted against each other, highlighting contradicting goals and emphasizing the relative features of the product (hedonic versus functional). It has indeed been argued that in dilemmas that bring out a contrast, rational deliberation is likely to play a leading role in solving the dilemma, whereas in general judgment one is more likely to rely on quick affective judgment (Monin, Pizarro, & Beer, 2007). Thus, with regard to hedonic consumption, forcing people to choose between two contrasting options, might induce deliberation and therefore promote licensing processes. It remains unclear, however, whether indulgent behavior per se, without an explicit alternative choice, evokes reasoning and therefore is susceptible to self-licensing.

Secondly, the choices people faced in the previous studies often did not represent typical self-regulatory dilemmas which involve gratifying immediate desires at the cost of negative future consequences. For example, choosing a low-brow over a high-brow magazine (Kivetz & Zheng, 2006) hardly bears any negative long-term consequences nor alludes to any strong temptational or visceral urge that needs to be resisted as is often the case for hedonic consumption (e.g., eating, smoking, drinking).

Thirdly, replacing a hedonic option with an available and equally valued functional one, such as a rich chocolate cake with a fresh fruit salad, is unlikely to evoke a self-control conflict. Rather, foregoing a hedonic option without replacing it is more suitable to induce a struggle between conflicting desires and more likely to be a reflection of the everyday self-control dilemmas people face. After all, when one declines the cake at a birthday party, there may not be a healthy fruit salad at hand. Hence, to determine whether self-licensing is a factor to incorporate into models of hedonic consumption, it would be useful to investigate whether self-

licensing also leads to an actual increase in indulgent behavior without the possibility of alternatives.

Another issue requiring examination is that common justification cues like prior restraint and effort can serve as justification, but also can also foster indulgence due to the depletion of self-control resources (Muraven & Baumeister, 2000). Although several self-licensing studies have manipulated justification cues by merely reminding participants of prior restraint or only varying relative effort, rather than actual effort, resource depletion cannot be ruled out as an alternative explanation for self-licensing. For instance, Ackerman and colleagues (2009) found evidence for vicarious resource depletion: imagining another person exerting self-control depleted self-control resources despite not actually engaging in an effortful task. It could be possible that having the impression of having exerted effort or restraining oneself produces similar results. To establish whether an observed increase in indulgent behavior indeed can be attributed to self-licensing processes rather than resource depletion, it is necessary to test whether the justification cues used in self-licensing studies require self-control resources.

Present studies

In the present paper we aim to investigate whether self-licensing leads to an increase in indulgent behavior and address above mentioned issues by (a) employing typical self-regulatory behavior rather than choice, and (b) ruling out depletion of self-control resources as the underlying mechanism of self-licensing. We predict that providing participants with a justification cue increases indulgence on a subsequent, unrelated, taste test, but will not lead to a decrease in self-control capacity.

An initial issue that requires examination regarding self-licensing as an additional route to self-gratification is that justifications such as prior restraint and effort can also cause indulgence due to the depletion of self control resources (Muraven & Baumeister, 2000). To determine whether indulgence is caused by resource depletion or by self-licensing, it would be necessary to incorporate a direct test of self-control capacity after the manipulation. However, it is impossible to directly test resource depletion without actually depleting resources, thereby disabling attributions of subsequent measures of self-control to self-licensing. Therefore we conducted a pilot study to test whether the justification cue employed in our study required self-control resources. This would allow us to establish whether an observed increase in indulgent behavior indeed can be attributed to self-licensing processes rather than depletion of self-control resources.

Pilot study

A pilot study tested whether a justification cue would deplete self-control resources by manipulating perceived effort followed by a direct measure of self-

control capacity: a Stroop task (cf. Webb & Sheeran, 2003). The effort manipulation consisted of an undemanding task which, to minimize self-control exertion, did not require inhibition of automatic responses. Depending on the condition, participants were led to believe they had completed the task either once (control condition) or twice (effort condition), thereby manipulating their perceived effort on the task, while keeping actual effort constant.

Method

Participants. One hundred and six female students with a mean age of 21.20 ($SD = 3.16$) participated in exchange for course credits or monetary reward. Six outliers ($SD > 3$ from the mean) on one of the dependent variables (Stroop error rates: $n = 5$; Stroop reaction time: $n = 1$) were excluded from analyses. Participants were randomly assigned to the control condition ($n = 50$) or the effort condition ($n = 50$).

Procedure. The study was presented in two supposedly unrelated parts. In the 'first' study, effort was manipulated by a bogus validation task for a new dyslexia screener. This 'validation study' involved a long, but undemanding, task with a one minute break halfway through the task. During this break, participants in the effort condition received feedback stating that they had to do the task again to establish the reliability of the screener, whereas participants in the control condition received feedback simply stating that they had a break. Thus, the control condition completed the task as if it were a single task of 10 minutes, while the effort condition completed this task in 2 x 5 minutes, under the impression that they were doing two tasks for the validation of the dyslexia screener. As a manipulation check, participants were asked to indicate how much they had enjoyed or disliked the task and the degree of effort they had exerted completing the task. Next, the Stroop test was administered as part of a 'second' study on color and stimulus response. Finally, after providing demographic information, participants were debriefed and reimbursed for their participation.

Materials.

Effort manipulation. 240 neutral words (e.g., horse, desk, wall) were presented consecutively and participants were asked to indicate the first letter of each word on their keyboard. After five minutes, the task paused for one minute. During this break, the control condition was presented with a blank screen indicating a pause, after which the task continued for another five minutes. During this break, participants in the effort condition were thanked for their participation in the dyslexia study and were informed that in order to establish the reliability of the task certain participants would be randomly selected to do the task again, after which they were informed that they indeed had been selected by the computer. The participants then completed the last five minutes of the task. Thus, both conditions completed exactly the same task.

Manipulation check. Possible differences between the conditions in evaluations of the dyslexia task were assessed by asking participants to rate different evaluative aspects of the task on 5-point Likert scales ranging from 1 (*not at all*) to 5 (*very much*). A positive task evaluation score was created by calculating participants' mean score on 'enjoyment', 'fun', and 'interestingness' of the task (Cronbach's $\alpha = .87$). A negative task evaluation score was created by calculating participants' mean score on 'boringness', 'tediousness', 'monotonousness' and 'dislike' of the task (Cronbach's $\alpha = .76$). Finally, a task effort score was created based on participants' mean scores on the 'extra effort', 'extra strains' and 'extra dedication' they had put into the dyslexia task (Cronbach's $\alpha = .70$).

Visceral state. To assess possible effects of the effort manipulation on visceral symptoms of resource-depletion (i.e. tiredness and hunger), participants had to indicate to what extent they were experiencing a range of visceral states ('tiredness' and 'energetic [reverse coded]; and 'hunger', 'appetite' and 'feeling like a bite') on a 5-point scale ranging from 1 (*not at all*) to 5 (*a lot*) before (T0) and after (T1) the effort manipulation. Indices of tiredness (Cronbach's $\alpha = .79$ at T0 and T1) and hunger (Cronbach's α 's = .93 and .95 at T0 and T1) were created based on the means of the respective scores.

Stroop task. The Stroop task (Stroop, 1935) is an established measure for inhibitory control (e.g., Inzlicht & Gutsell, 2007; Richeson & Trawalter, 2005) in which participants must override their dominant response (reading the semantic meaning) to name the color of the word. The Stroop task consisted of twelve practise trials to familiarize the participants with the task, which were then followed by 256 actual trials: 64 congruent trials with the word color matching its semantic meaning and 192 incongruent trials with the word color mismatching its semantic meaning. In addition to mean reaction time (RT) for each trial type (congruent and incongruent), we calculated error rates for each trial type. Greater values indicate decreased self-control capacity (e.g., Inzlicht & Gutsell, 2007; MacLeod, 1991; Webb & Sheeran, 2003).

Results

Manipulation check.

Task ratings. An ANOVA showed that participants in the effort condition believed they had exerted more effort ($M = 2.48$, $SD = .61$) than participants in the control condition ($M = 2.10$, $SD = .66$), $F(1, 98) = 8.29$, $p = .01$, $\eta_p^2 = .08$. The manipulation of effort was thus successful. A MANOVA on participants' positive and negative task evaluation scores indicated that the conditions did not differ in participants' valence ratings of the task, $F < 1$.

Visceral state. To explore the influence of the effort manipulation on tiredness and hunger, a repeated measures analysis was conducted with condition as between-subjects factor and the score for tiredness at T0 and T1 as within-subjects factor. A significant effect of time was found; participants were more tired

after the task ($M = 2.35$, $SD = .93$) than at baseline ($M = 2.05$, $SD = .84$), $F(1,98) = 12.05$, $p < .001$, $\eta p^2 = .15$. However, no significant interaction or condition effects were found. A similar analysis was conducted with hunger at T0 and T1, yielding no main or interaction effects, indicating that the effort manipulation did not have an effect on hunger.

Stroop task. To assess Stroop interference, we contrasted performance on the incongruent trials with performance on congruent trials using RT as dependent variable. A 2 (Condition: control vs. effort) \times 2 (Trial type: congruent vs. incongruent) mixed-model ANOVA, with the second factor within-subjects revealed the typical Stroop interference effect, $F(1, 98) = 134.75$, $p < .001$, $\eta p^2 = .58$, yet no significant condition effect or interaction between condition and trial type was observed, p 's $> .38$. Secondly, a similar analysis was performed with error rates as performance measure. Again, results revealed the typical Stroop interference effect, $F(1, 98) = 107.63$, $p < .001$, $\eta p^2 = .52$, yet failed to find a significant interaction between condition and trial type, $p = .32$. However, a marginally significant main effect of condition was found in the opposite direction, indicating that participants in the control condition generally made more errors ($M_{\text{congruent}} = 2.72$, $SD_{\text{congruent}} = 2.37$, and $M_{\text{incongruent}} = 8.50$, $SD_{\text{incongruent}} = 6.68$) than participants in the effort condition ($M_{\text{congruent}} = 1.84$, $SD_{\text{congruent}} = 2.21$, and $M_{\text{incongruent}} = 6.61$, $SD_{\text{incongruent}} = 5.91$), $F(1, 98) = 2.99$, $p = .09$, $\eta p^2 = .03$. Thus, Stroop performance indicated that the effort manipulation did not deplete self-control resources in comparison to the control condition. These null findings cannot be attributed to a lack of power, as the sample size of 100 provided us with a power of more than .95 to detect a small to medium effect size.

Discussion

The findings from the pilot study confirmed that perceiving oneself as having invested effort does not deplete self-control resources. An increase in intake in a subsequent hedonic task would therefore not be attributable to a loss of self-control capacity.

Study 1

In Study 1 the self-licensing model was tested by using the effort manipulation that was tested in the pilot study after which the participants were given the opportunity to indulge in a tasty but unhealthy taste test. We hypothesized that participants who believed they had exerted more effort by doing the task twice, would feel licensed to indulge by eating more unhealthy snacks. In addition, to rule out alternative explanations besides self-control capacity, Study 1 controlled for additional variables that could facilitate hedonic consumption such as negative mood (Tice et al., 2001), visceral state (e.g., hunger; Loewenstein, 1996) or perceived ego-depletion (Clarkson, Hirt, Jia, & Alexander, 2010).

Method

Participants. Thirty-nine female university students participated in this study in return for a monetary reward (€5,-) or course credits. We used female participants, as research has shown that they experience food more as a self-regulatory dilemma than males (Grogan, Bell, & Conner, 1997). This makes them more likely to use justifications for indulging in highly caloric food. Two participants with extreme values ($SD > 3$ from the mean) regarding food intake were excluded from the analyses. The final sample consisted of 37 participants (control condition: $n = 17$; effort condition: $n = 20$) with an average age of 20.65 years ($SD = 1.58$) and a mean BMI of 21.43 ($SD = 2.16$).

Procedure. As in the pilot study, participants were told they were participating in two separate studies: a dyslexia study and a consumer test for a large supermarket chain. To create standardized satiety rates, participants were informed beforehand that they could only participate if they had not eaten for at least two hours. After baseline measures of affect, the same 'validation' study as tested in the pilot study was used to manipulate perceived effort. To control for alternative factors that can influence hedonic consumption, participants' emotional state and state self-control were assessed afterwards to establish whether the task caused any differences in emotional state and sense of self-control between the conditions, followed by the same manipulation check as in the pilot study. As part of the 'second study', participants' feelings of hunger were assessed. Food intake was determined by means of a bogus taste test in which participants had to taste and evaluate different brands of snacks. Unbeknownst to the participants, each bowl was weighed in advance. Afterwards, the food was weighed by the experiment leader who was blind to the participants' experimental condition to calculate food intake. Finally, after providing demographic information, participants were debriefed and reimbursed for participation.

Materials.

Effort manipulation. The effort manipulation that was tested in the pilot study was used.

Manipulation check. The positive and negative task evaluations (positive vs. negative task evaluation score: $\alpha = .80$ vs. $\alpha = .81$), and measure of perceived effort (Cronbach's $\alpha = .77$) were identical to the ones used in the pilot study.

Emotional state. Participants rated their current emotional state on 5-point Likert scales. A positive emotion score was created by calculating participants' mean score on 'contentment', 'happiness', 'cheerfulness', 'relaxation', 'pleasantness' and 'joyfulness' (Cronbach's $\alpha = .73$ and $\alpha = .87$ at T0 and T1 respectively). A negative emotion score was created by calculating participants' mean score on 'shame', 'guilt', 'anger', 'sadness', 'worrying', 'disgust', 'tension', 'irritation' and 'frustration' (Cronbach's $\alpha = .93$ and $\alpha = .86$ at T0 and T1).

Perceived self-control capacity. To control for perceived resource depletion (Clarkson, et al., 2010), the State Self-Control Questionnaire (Ciarocco, Twenge, Muraven, & Tice, 2007) was included, consisting of 17 items that could be answered on 5-point scales to measure their current subjective state of self-control (Cronbach's $\alpha = .88$, an example being: "At this moment it would be difficult to exert self-control").

Hunger. Participants indicated on 5-point scales how much they currently experienced hunger, appetite and were feeling like a bite. These items were combined into a single *hunger* rating (Cronbach's $\alpha = .90$). In addition, participants were asked to indicate how long ago they had had their last meal (in minutes).

Food intake. Participants tasted four different kinds of snack food: Chips, M&M's, wine gums and chocolate chip cookies. For each different type of snack two different brands were provided (labeled A and B), which had to be compared on taste and perception. So in total, participants were provided with eight different bowls of snacks. The weight of food consumed was calculated based on the difference in weight of the bowls before and after the taste test. Because the different kinds of snacks differed in size and weight, each snack type was standardized and Z scores were summed for each participant to create an index of food intake. For ease of interpretation, means will be reported in grams.

Results

Randomization and manipulation check. Separate analyses of variance (ANOVAs) were performed with condition (control vs. effort) as the independent variable and as dependent variable age, BMI, time since last meal, and baseline affect. The condition effects were not significant (p 's $> .24$), indicating successful randomization.

An ANOVA showed that participants in the effort condition believed they had exerted more effort ($M = 2.72$, $SD = .85$) than participants in the control condition ($M = 1.88$, $SD = .63$), $F(1, 35) = 11.08$, $p < .001$, $\eta_p^2 = .24$. The manipulation of effort was thus successful. A MANOVA with the positive and negative task evaluations as dependent variables did not reach significance, F 's < 1 , indicating that the conditions did not differ in their valence ratings of the task.

Emotional state. A MANOVA on the positive and negative emotion scores did not reveal a significant condition effect, $F < 1$, indicating that perceived effort did not affect emotional state.

Perceived self-control. An ANOVA revealed that after completing the effort task, perceived levels of self-control were equal in the effort ($M = 4.83$, $SD = .97$) and control conditions ($M = 4.84$, $SD = .77$), $F < 1$.

Hunger. An ANOVA with hunger as dependent variable revealed a significant condition effect $F(1, 35) = 6.53$, $p = .02$, $\eta_p^2 = .16$. Participants in the effort condition experienced significantly more hunger ($M = 3.63$, $SD = .67$) than

those in the control condition ($M = 3.02$, $SD = .79$). Hunger was therefore included as a covariate in subsequent analyses.

Food intake. The intake of snacks was subjected to an ANCOVA with condition as independent variable and hunger as covariate. A preliminary analysis evaluating the homogeneity of regression slopes confirmed that the slopes for hunger did not differ between conditions, $F(1,35) = .77$, $p = .39$. The ANCOVA was significant: participants in the effort condition consumed more snacks ($M = 102.20$, $SD = 34.83$) than participants in the control condition ($M = 76.94$, $SD = 28.12$), $F(1, 35) = 4.79$, $p = .04$, $\eta p^2 = .12$. The covariate did not reach significance ($p = .42$). When hunger was not included as a covariate the impact of perceived effort on consumption increased further, $F(1,35) = 7.55$, $p = .01$, $\eta p^2 = .18$.

Discussion

The results of Study 1 confirmed our expectations that a justification cue leads to an increase in hedonic eating. The participants who were led to believe that they had completed two tasks consumed on average 26 grams more snacks than participants who actually performed the same task but thought they had only completed a single task. This equals an additional intake of 130 calories within a time span of 10 minutes. This difference in hedonic eating cannot be explained by differences in positive/negative task evaluations, emotional state or perceived self-control capacity. Although there was a difference in reported hunger, this difference did not account for the increase in food indulgence.

General discussion

Although previous studies demonstrated that self-licensing processes are involved in hedonic versus functional decision making, the present studies add that self-licensing also increases indulgence in actual self-regulatory behavior. Moreover, these studies indicate that self-licensing processes cannot be attributed to a decrease in inhibitory control, but that self-licensing is a separate mechanism leading to gratification.

These findings demonstrate that self-licensing, in addition to impulsive influences, could contribute to a more comprehensive understanding of the ways in which people act against their better judgement. As overconsumption lies at the heart of many societal problems, self-licensing is an important mechanism to take into account when addressing the consequences of inadequate self-regulation.

While the current findings demonstrated that self-licensing occurs in the absence of ego-depletion, it does not necessarily mean that they always operate as independently as is currently described. Their seeming relatedness raises the question whether self-licensing and ego-depletion are fundamentally different or whether they are different manifestations of a common underlying mechanism. Kivetz and Zheng (2006) argued for example that ego-depletion, as well as other impulsive sources of self-gratification, might operate via a justification-based

mechanism. Thus initial acts of self-control could also serve as a justification to indulge. A suggestion that is strengthened by the recent finding that merely perceiving oneself as depleted can impact subsequent self-regulatory performance independent of one's actual state of self-control depletion (Clarkson et al., 2010). Similarly, Polivy and Herman (2002) state in their false hope model that dieters seem to implicitly apply the idea of resource depletion, believing that one can only exert effort for so long before giving up. Consequently, when experiencing difficulties in their weight-loss efforts they attribute this to a lack of willpower or effort to justify their lack of progress. The notion that people rely on lay theories of willpower as limited resource is corroborated by new research revealing that reduced self-control after initial effort is moderated by such beliefs rather than actual resource depletion (Job, Dweck & Walton, 2010). Another possibility is that self-licensing and ego-depletion interact in their contribution to hedonic behaviors. For instance, being depleted might engender self-licensing processes.

Relatedly, the finding that participants who were under the impression of having completed two tasks reported more hunger again confronts us with the question whether self-licensing or resource-depletion is at play. While the differences in hunger did not explain the effects on consumption, this observed difference in hunger is intriguing considering that all participants were not allowed to eat two hours beforehand to standardize satiety rates. In line with the resource-depletion perspective it could be argued that participants in the effort condition were indeed depleted of self-control resources, as there is evidence that resource-depletion reflects lower levels of blood glucose (Gailliot et al., 2007). Considering the results of the pilot study where perceived effort did not influence hunger this seems unlikely however, guiding explanations in the direction of licensing mechanisms. It could for example be hypothesized that the observed increase in hunger was caused by the indulgent nature of the subsequent task. Perhaps the realization that one has a justification that allows one to indulge in the subsequent taste test enhanced the anticipation for the tasty food in the extra effort condition. Some related evidence for such a mechanism comes from a study by Mukhopadhyay and Johar (Study 2; 2009) in which participants preferred a food indulgence over a healthier food option after they had recalled prior restraint, but this effect disappeared when prior restraint was not salient. Thus, having a justification cue such as perceived effort or prior restraint can make the subsequent indulgence more tempting, thereby facilitating indulgent tendencies. Another possibility is that the difference in hunger ratings in fact represents a case of 'double self-licensing', where the increase in self-reported hunger is a valid way to license the subsequent indulgence. Nevertheless, these remain speculations that provide interesting opportunities for future research.

Another issue that requires further investigation is the explicitness of self-licensing processes. Whilst the current results demonstrate that people rely on

reasons when indulging, the justification process remained quite implicit. In the present study people were provided with a justification cue rather than having to actively construe reasons that would foster indulgence. Moreover, as the justification cue used was quite implicit it remains to be answered how aware participants were of deploying justifications to allow self-gratification. It could very well be that participants acted on implicit beliefs such as that hedonic consumption is only allowed when one has exerted effort or restraint, or applied some sort of heuristic implying that effort or fatigue deserves gratification. This suggestion is already put forward by Kivetz and Zheng (2006) who argue that justification cues might exert their effect outside of consciousness. Future studies should explore whether such unconscious reliance on justifications is the result of an initially conscious process in which explicit justifications become heuristics to rely on in similar circumstances. Nevertheless, although many questions about self-licensing warrant further investigation, the current studies demonstrate that sometimes people strategically choose to indulge and that gratification of our desires is not inevitably governed by our impulses.

As the current studies are the first to expand the topic of self-licensing to hedonic behavior, some limitations have to be noted. The self-licensing process was only tested in a female student population. Although there is no theoretical ground to expect that this process does not generalize to other populations, its generalizability should be tested in other relevant samples, for example males or older adults. Furthermore, to more firmly establish self-licensing as a source of maladaptive self-regulation, its impact on other types of problematic self-regulatory behavior should be investigated such as impulsive buying or procrastination. Additionally, more should be known about other types of justification cues than effort. Consumer research suggests that altruism and restraint may also be likely instigators of self-licensing (Khan & Dhar, 2006; Mukhopadhyay & Johar, 2009).

In sum, the current paper demonstrated that self-licensing is a relevant mechanism underlying unhealthy behavior that is distinct from previously established impulsive routes. By uncovering alternative pathways to hedonic overconsumption, we hope to contribute to a more comprehensive view of self-regulation.

Chapter 5

Emotional license:

Negative emotions as
justification for self-regulation
failure

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Abstract

This chapter challenges the notion that negative emotions cause self-defeating behavior by making us more impulsive. We hypothesize that emotions may be used as a justification to pursue the short-term hedonic option instead of the overriding long-term goal. Study 1 established that negative emotions are suitable to license oneself forbidden pleasures by mitigating guilt associated with hedonic consumption. Three subsequent studies tested whether being aware of an emotional event increases actual hedonic consumption while ruling out direct emotion effects. Results indicated that, despite being equally emotional, participants highly aware of an emotional event consumed more tasty but unhealthy snacks compared to participants less aware of the event (Study 2). Furthermore, highly aware participants only consumed more of forbidden foods but not of equally palatable but healthy foods (Study 3 and 4). This suggests that emotions can lead to indulgent behavior more deliberately by employing negative emotions as a justification.

Negative emotions have a bad reputation for interfering with our long-term goals. From the colloquial usage of terms such as 'retail therapy' to sentence reductions for crimes committed under the influence of emotions, the conventional view seems to be that our intentions to save up, eat healthily, drink less and be nice to our loved ones are compromised under emotional distress. Although negative emotions can sometimes boost self-control (e.g., Giner-Sorolla, 2001), this negative stereotype is not undeserved. Numerous empirical studies provide evidence that negative affective states instigate regretful behavior. It has been found, for instance, that negative affect promotes smoking in smokers (McKee et al., 2010), increases the chance of relapse among people trying to quit heavy drinking (Witkiewitz & Villaroel, 2009), encourages shopping among compulsive buyers (Faber & Christenson, 1996), and increases procrastination (Tice, Bratslavsky, & Baumeister, 2001).

To explain how aversive emotional states undermine attempts at self-regulation, typically dual-system accounts of self-regulation (e.g., Metcalfe & Mischel, 1999; Strack & Deutsch, 2004) are employed. A prominent example of such a model is the so called 'hot-cool model' of self-regulation (Metcalfe & Mischel, 1999). According to this model there are two interacting self-regulatory systems; a 'cool' cognitive system and a 'hot' emotional system. It is assumed that individuals in 'hot' states are impulsive and focused on instant gratification, whereas in 'cool' states individuals are reflective and focused on controlling the self, thereby facilitating behavior in line with one's long-term goals. As such negative emotions are typically described as hot forces that interfere with successful goal pursuit, leaving behavior under distress guided by our hedonic tendencies, a claim that is indeed supported by empirical evidence indicating that negative affect decreases the ability (Keinan, 1987; Leith & Baumeister, 1996; Loewenstein, Weber, Hsee, & Welch, 2001; Luce, Bettmann, & Payne, 1997) or motivation (Andrade, 2005; Tice et al., 2001) to override impulsive inclinations towards immediate rewards. Together with other factors such as visceral states (Loewenstein, 1996), low cognitive capacity (Hofmann, Gschwendner, Wiers, Friese, & Schmitt, 2008), and low self-control resources (Muraven & Baumeister, 2000), emotions are generally perceived as (proto)typical impulsive forces that undermine our attempts at effective goal pursuit.

However, as the view that emotions leave us powerless in the face of temptation is so engrained in both popular and theoretical accounts of self-regulation, other pathways by which negative emotions can be obstacles of successful goal pursuit may have been overlooked. A new line of research suggests that indulgent behavior is not always the consequence of a loss of self-control (De Witt Huberts, Evers, & De Ridder, 2012a), but that long-term goals are sometimes deliberately violated when the context justifies doing so, a phenomenon coined self-licensing (Khan & Dhar, 2006; De Witt Huberts et al., 2012a). As such

self-licensing symbolizes a departure from the conventional dual-systems conceptualization of self-regulation that views reason as a tool to manage the undermining influence of our impulsive inclinations. Fuelled by evidence from this new line of research we propose that there is an additional but underresearched explanation for the self-defeating influence of emotions on behavior: emotions as justification, where negative emotions are deliberately employed as a license to justify a departure from one's long-term goal. In the present paper we therefore investigate whether negative emotions may be used as a license to sin.

Self-licensing

Self-licensing is based on the finding from decision-making research that people are more likely to make a choice that can easily be justified (Shafir, Simonson, & Tversky, 1993). As the need to choose often creates conflict, decision makers seek and construct reasons in order to resolve the conflict and justify their choice (e.g., Kivetz, 1999; Simonson, 1989; Shafir et al., 1993). When confronted with a typical self-regulation dilemma of gratifying immediate desires versus the pursuit of long-term benefits, people will in many cases be inclined to pursue the hedonic option, but will only do so when the situation allows them to justify it (Kivetz, 1999; Okada, 2005). Thus, sometimes indulgence is not determined by one's capacity to control oneself, but rather by the availability of reasons that one has to justify the prospective indulgence.

Recently the role of self-licensing in self-control processes have become the topic of empirical investigation, demonstrating that having a justification leads to a preference for vice over virtue in choice paradigms (Kivetz & Zheng, 2006; Khan & Dhar, 2006; Mukhopadhyay & Johar, 2009), and leads to an increase in hedonic consumption (De Witt Huberts et al., 2012a). These recent findings on self-licensing processes in hedonic behavior challenge the conventional hot-cool conceptualization of self-regulation that describe indulgent behavior as the consequence of impulsive factors, while deliberation would foster goal-directed behavior. For instance, prior effort not only exercises influence due to depletion of limited self-regulation resources (Muraven & Baumeister, 2000), a typical hot factor, but it can also serve as a justification to indulge while self-control resources to resist temptation remain intact (De Witt Huberts et al., 2012a). This example suggests that the relationship between hot-cool processes as described in dual-process models of self-regulation is not as clear-cut, raising the question whether a classically depicted impulsive factor such as negative emotions could also be applied as a justification and thereby undermine self-regulation in a more deliberate manner. To illustrate, consider the girl who spends the money she is trying to save up on a new pair of shoes, reasoning that she can spend it because she just had an argument with her boyfriend. This example suggest that emotions do not always exert their detrimental influence on behavior by making us more

impulsive: the girl in this example may feel bad and not act in accordance with her intentions, yet she is not acting impulsively. Instead she seems to reason that she can allow herself a forbidden pleasure *because* she is feeling bad. However, despite its intuitive appeal and commonplace examples, it has not yet been tested whether experiencing a typical ‘hot’ state such as a negative emotion can also serve as a justification for goal-defying behavior.

Emotions as license

Precisely the widely held assumption that emotions breed irrationality could make emotions a very good candidate to justify lapses in self-control. After all, hedonic consumption is often associated with guilt (Giner-Sorolla, 2001) and, in line with the conventional view, acting under the influence of emotions is commonly judged as carrying less personal responsibility, presumably reducing this guilt (Xu & Schwarz, 2009). Indeed, in the domain of moral behavior it has already been demonstrated that immoral behavior under the influence of emotions reduces the responsibility and culpability of the transgressor (Pizarro, Uhlmann, & Salovey, 2003), suggesting that a similar mechanism may take place when judging failures of self-regulation.

An example of a phenomenon where emotions may be used as a license rather than a direct cause of indulgent behavior is emotional eating; the increased intake of especially unhealthy food, when emotional. While emotional eating is a widely shared belief, making (over)eating under distress a ‘licensed’ indulgence, empirical evidence for the disruptive influence of emotions on food intake remains scarce (e.g., Evers, De Ridder, & Adriaanse, 2009), rendering it a suitable candidate to investigate whether negative affect¹ directly causes indulgence or whether instead it is used as a justification for gratification.

While acknowledging that emotions can directly impact behavior, based on these observations we suggest that in certain cases emotions are deliberately used to temporarily set aside long-term goals and pursue the short-term hedonic option instead. The aim of the present paper is therefore to investigate whether negative emotions are sometimes used as a deliberate justification for prospective self-regulation failure.

Study overview

Four studies investigated whether emotions are used as a justification to allow a departure from one’s long-term goal. We tested our hypothesis in the classic self-regulation paradigm of eating behavior, not only providing us with a typical self-regulation dilemma that many people face in everyday life, but also

¹ Although we theoretically propose that discrete negative emotions can also instigate licensing processes, due to the nature of the manipulation used, measurements of affect were better suited in the present studies. We will therefore use the terms emotion and affect interchangeably.

allowing us to investigate an indulgent behavior that is typically related to emotions, as reflected by popularity of the term ‘emotional eating’. Consequently, we used female participants in all four studies, as research has shown that they experience food more as a self-regulatory dilemma than males (Grogan, Bell, & Conner, 1997). This makes women more likely to use justifications for indulging in highly caloric food.

Firstly, we investigated if negative emotions are a suitable license to justify transgressions of self-regulation goals by reducing personal blame. The three following studies then tested whether negative affect is actually applied as a justification to allow oneself an otherwise forbidden indulgence. These latter three studies all followed the same basic procedure: firstly negative affect was induced and, depending on the condition, participants were made either highly aware or minimally aware of the cause of their emotions, after which snack food consumption was measured in a supposedly unrelated bogus taste test.

To discern the direct impact of emotions on behavior from the use of emotions as justification we manipulated the degree of awareness of the emotional event. We hypothesized that only people highly aware that they had experienced an emotional event would expose indulgent behavior, as their awareness of the negative event would provide them with a justification to license gratification, a justification not at the disposal of people who had minimal awareness of having experienced a negative event.

We chose to manipulate awareness of the emotional event rather than awareness of the emotion itself for two reasons. Firstly, in addition to the ongoing debate in the literature about the existence of unconscious emotions (Feldman Barrett, 2005; Clore, 1994; Winkielman & Berridge, 2004), it is not yet clear when a basic emotional reaction is accompanied by conscious feelings, rendering the manipulation of awareness of one’s emotional state difficult. Similarly, the subjective and internal nature of the emotion experience makes it impossible to rule out awareness of one’s emotion. Secondly, and importantly, manipulating awareness of the emotional event allowed us to compare the impact of emotions as a licensing cue to the direct impact of emotions on behavior. As both conditions would be in the same, and crucially, comparable emotional state, direct emotion effects could be ruled out, while allowing us to assess the impact of emotions as justification.

To manipulate awareness of the emotional event we used a priming paradigm where participants were exposed to negatively valenced pictures from the International Affective Picture System (IAPS; Lang, Bradley, & Cuthbert, 2001). In the high-awareness condition participants were exposed to the prime for a long duration, whereas in the minimal awareness condition participants were exposed to the negative primes for a very short duration. Thus participants in both conditions would be equally negative after the negative emotion induction, but would differ in

their levels of awareness of the cause of their negative affect. The negative affect induction was followed by a bogus taste test, where participants were required to sample and rate food.

Following this basic procedure, Study 2 examined whether being highly aware of experiencing an emotional event could serve as a reason to indulge in tasty but unhealthy snack foods. Study 3 further expanded this by investigating whether indeed it was a case of self-licensing, testing whether emotions were applied to indulge in forbidden pleasurable foods in particular. Finally, Study 4 constituted the final test of our hypotheses by omitting any affect ratings. This allowed us to minimize awareness of negative affect across conditions, thereby allowing us to attribute the observed findings to the degree of awareness of the cause of the negative affect specifically.

We predict that being aware of experiencing an emotional event would provide a license to indulge and therefore lead to an increase in unhealthy snack consumption.

Study 1

Study 1 investigated whether hedonic overconsumption committed under the influence of negative affect was judged to be less blameworthy than when the same behavior is committed in a neutral affective state. To this end we followed the study by Pizarro and colleagues (2003) on judgments of moral transgressions, applying it to eating behavior. Participants read descriptions of hedonic consumption which was either performed in a neutral state or in a negative affective state. Following the conventional view that emotions breed irrationality and thereby diminish personal responsibility, it was hypothesized that the same hedonic behavior would be judged as less blameworthy when it was committed during a negative emotional state than during a neutral emotional state. To control for judgments of blameworthiness of one's own behavior versus judgements of other people's behavior, participants had to judge either their own behavior or that of another person, resulting in a 2 (Perspective: self vs. other) x 2 (Emotional state: sad vs. neutral) between subjects design.

Method

Participants. Eighty female students participated for course credit or €1,-. Participants were randomly assigned to one of the four conditions (self-sad; other-sad; self-neutral; and other-neutral).

Materials and Procedure. Each participant read one vignette describing behavior either of a fictional individual or was instructed to imagine herself in the described situation. In the neutral condition participants read about the protagonist eating a whole package of cookies despite being on a weight-loss diet. In the negative emotion condition, participants read the same description, but additionally

were informed that the protagonist was sad because her boyfriend had just broken up with her. Participants judged the protagonist's behavior on 7-point Likert scales. Specifically: "How bad do you find the behavior (of the protagonist)?"; "How weak do you find the protagonist?"; "How responsible is the protagonist for her behavior?"; "How much is the protagonist to blame for her behavior?" Factor analyses indicated that the responses all loaded on a single factor and therefore were combined to create a single measure of blameworthiness (Cronbach's $\alpha = .83$), with higher scores reflecting higher ascriptions of blame.

Results

A 2 (Perspective: self vs. other) x 2 (Emotional state: emotional vs. neutral) Analysis of Variance (ANOVA) was conducted on the score of blameworthiness. The ANOVA yielded a significant main effect for Perspective, $F(1,78) = 8.81$, $p < .001$, $\eta_p^2 = .10$, demonstrating that participants judged goal transgressions of others ($M = 5.24$, $SD = 1.18$) less severely than their own transgressions ($M = 5.99$, $SD = 1.61$). However, the interaction between perspective and emotional state did not reach significance, $F(1,77) = 1.95$, $p > .05$, indicating that levels of blame for the behavior in the respective emotional states did not differ for perspective. As we were mainly interested in the influence of the emotional state of the protagonist on ascriptions of blame, the vignettes for self- and other perspective were therefore collapsed for subsequent analyses (sad: $n = 40$; neutral: $n = 40$). The ANOVA with emotional state (sad vs. neutral) as independent variable and blameworthiness as dependent variable yielded a significant main effect, $F(1,78) = 41.84$, $p < .001$, $\eta_p^2 = .36$. Participants rated breaking one's dieting intention when emotional as less blameworthy ($M = 4.80$, $SD = 1.28$) than when being in a neutral affective state ($M = 6.44$, $SD = 1.11$). This result confirms the hypothesis that transgressions of one's personal standards are judged to be less blameworthy when performed in a negative emotional state than in a neutral state.

Discussion

The result that behavior that is not in line with one's intentions is judged to be less blameworthy when performed in a negative emotional state than when in a neutral state corresponds with the general conceptualization of behaviors under the influence of emotions as bearing less responsibility. These results strengthen the assumption that negative affect would be a suitable candidate to justify prospective lapses in goal-directed behavior, as it would allow us to experience the pleasure of a forbidden treat without the (anticipated) guilt.

Study 2

While Study 1 demonstrated that negative emotions are commonly perceived as an adequate justification for transgressions of personal goals, Study 2 takes this line of reasoning a step further and explores whether negative emotions

are in fact being used as a justification to allow a departure from one's long-term goal.

Method

Participants. Forty-two female students participated in this study for course credit or €6. One participant who indicated to not want to participate in the taste test and two participants who were outliers on the dependent variable ($SD > 3$) were excluded from analysis resulting in a final sample of 39 participants (high-awareness condition: $n = 21$; low-awareness condition: $n = 18$) with an average age of 22.54 years ($SD = 3.68$).

Procedure. Upon arrival at the laboratory it was explained to the participants that they were participating in two separate studies: a study for visual memory and a consumer test for a large supermarket chain. As part of the supposed first study on visual memory, after baseline measures of affect (T0), negative affect was induced by presenting negatively valenced pictures. Awareness of the affective event was manipulated by presenting the negative pictures either very briefly (120 ms) or for an extended timeframe (4000 ms), masked by neutral pictures. Afterwards, negative affect (T1) was assessed again to check whether negative affect had successfully been induced. In line with the cover story of the visual memory study, participants had to write down as many pictures as they remembered seeing to check if the participants were indeed highly or minimally aware of the negative images. Then, as part of the 'second study', participants' feelings of hunger were assessed. Food intake was determined by means of a bogus taste test in which participants had to taste and evaluate different brands of snacks supposedly commissioned by a large retail concern. Unbeknownst to the participants, each bowl was weighed in advance and afterwards to calculate participants' food intake. Finally, participants' expectancies that eating helps to alleviate negative affect were measured and demographic information was assessed, after which participants were debriefed and reimbursed for participation.

Materials.

Awareness manipulation. Negative affect was induced by presenting people with eight negative pictures from the International Affective Picture System (IAPS; Lang et al., 2001). Based on normative valence ratings (ranging from 1 *most unpleasant* to 9 *most pleasant*) a set of eight pictures with valence ratings under 3 were selected to induce negative affect. Each of the negative pictures was masked with a neutral picture (valence ratings between 4 and 5). In the high-awareness condition, negative pictures were presented for 4000 ms, long enough to induce high awareness, followed by a neutral mask for 120 ms. In the low-awareness condition the negatively valenced pictures were presented very briefly (120 ms) to minimize awareness, again followed by a neutral mask for 120 ms.

Manipulation check. To examine whether participants in the low-awareness condition were indeed less aware of the negative pictures than participants in the high-awareness condition, participants were asked to write down and describe as many pictures as they could remember. The number of correctly remembered negative pictures was used as measure of awareness of negative affect, ranging from 0 (none of the negative pictures remembered) to 8 (all negative pictures remembered).

Assessment of negative affect. Affect was assessed before (T0) and after (T1) the affect induction by means of a Visual Analogue Scale (VAS), ranging from 0 (*very negative*) to 100 (*very positive*). For ease of interpretation reverse scored means will be reported, with higher scores reflecting higher levels of negative feelings.

Food intake. Participants tasted two different kinds of snack food: chips and cookies. For each snack type two different brands were provided (labeled A and B), which had to be compared on taste and perception. Thus, in total, participants were provided with four different bowls of snacks. The weight of food consumed was calculated based on the difference in weights of the bowls before and after the taste test. The number of calories consumed was calculated by multiplying the number of grams by the energetic value (in Kcals) per gram for each of the specific food types and then summed to create a measure of snack consumption. As the mean amounts of calories consumed were not normally distributed, they were natural-log transformed before analyzing the data. For the ease of interpretation, means will be reported in calories.

Hunger. To control for the effect of hunger on food intake, participants indicated on 5-point scales how much they currently experienced hunger, appetite and were feeling like a bite. These three items were combined into a single *hunger* rating (Cronbach's $\alpha = .90$).

Eating expectancy. To control for expectancies that people might have about the mood improving effects of food, causing them to eat more when feeling negative for emotion regulation purposes (Tice et al., 2001) rather than self-licensing, we included the 'Eating Helps Alleviate Negative Affect' subscale of the Eating Expectancy Inventory (EEI; Hohlstein, Smith, & Atlas, 1998) which consists of 18 items (e.g., "Eating helps me deal with sadness or emotional pain"; "When I am feeling depressed or upset, eating can help me take my mind off my problems"; Cronbach's $\alpha = .91$).

Results

Randomization check. Separate ANOVA's were performed with condition (high-awareness vs. low-awareness) as the independent variable and age, eating expectancy, and baseline affect as the dependent variables. No significant effects (p 's > .21) were found, indicating successful randomization.

Manipulation check. An ANOVA with condition as independent variable and number of remembered negative pictures as dependent variable revealed a significant effect. In the high-awareness condition participants reported to have seen more negative pictures ($M = 5.00$, $SD = 1.18$) than in the low-awareness condition ($M = 1.78$, $SD = 1.06$), $F(1, 37) = 79.03$, $p < .001$, $\eta_p^2 = .68$, indicating that the manipulation of awareness had been successful.

Assessment of negative affect. Negative affect was subjected to a 2 (Time: before and after induction) X 2 (Condition: high-awareness vs. low-awareness) mixed-design ANOVA with time as within-subjects factor. The analysis revealed a main affect of time, $F(1,37) = 21.04$, $p < .001$, $\eta_p^2 = .36$, with more reported negative affect after the manipulation (T1: $M = 39.54$, $SD = 14.14$) than before the manipulation (T0: $M = 31.26$, $SD = 16.55$). The interaction effect between time and condition did not reach significance, $F(1,37) = 1.19$, $p = .28$, nor did emotion ratings differ across conditions, $F(1,37) = 1.45$, $p = .25$. Negative affect was thus successfully, and equally, induced in both conditions.

Hunger. An ANOVA with condition as independent variable and hunger as dependent revealed a significant difference, $F(1, 37) = 4.05$, $p < .05$, $\eta_p^2 = .09$, with the high-awareness condition reporting more hunger ($M = 3.52$, $SD = .92$) than the low-awareness condition ($M = 2.91$, $SD = .99$). We therefore included hunger as a covariate in the main analysis.

Food intake. An Analysis of Covariance (ANCOVA) with condition as independent variable, hunger as control variable and amount of calories consumed as dependent variable revealed a significant effect: participants in the high-awareness condition ate significantly more of the unhealthy snacks ($M = 345.22$, $SD = 154.16$) than participants in the low-awareness condition ($M = 270.12$, $SD = 176.32$), $F(1,36) = 5.86$, $p < .05$, $\eta_p^2 = .13$. The covariate did not reach significance, $p = .19$. When not controlling for hunger, the difference remained significant, $F(1, 37) = 4.10$, $p < .05$, $\eta_p^2 = .10$.

Discussion

The results of Study 2 suggest that it is not negative affect itself but rather the relative awareness of the emotional event that leads to indulgent behavior, supporting the assumption that negative emotions are used as a means to justify having a forbidden treat.

As the present results are among the first to provide evidence that emotions can be used as a justification to indulge, new questions are raised by the current findings. Firstly, the question arises whether emotion itself exerted any effect on behavior. Although the current studies indicated that awareness of experiencing an emotional event rather than emotion itself instigates indulgent behavior, it cannot yet be concluded whether negative affect itself had any effect on hedonic consumption. Secondly, a more stringent test of the emotions as

justification hypothesis would be if awareness of emotions would *only* lead to an increase in intake of forbidden foods, that is foods that need to be justified, but would not influence consumption of equally tasty food that is in line with one's long-term goal. Study 3 was designed to address these issues by replicating the previous findings while providing a more stringent test of the hypothesized self-licensing mechanism.

Study 3

As self-licensing contends that people rely on justifications to allow themselves an otherwise forbidden pleasure, justifications are only necessary for behavior that violates one's long-term goals (e.g., eating fattening snacks when one wants a slim figure). Behavior that is in line with one's goals, such as eating healthy snacks, does not necessitate a justification (Okada, 2005). In line with these findings we expect that people who have the justification of being in a negative affective state would increase hedonic consumption (i.e. consumption of attractive but forbidden food), but would not affect consumption of products that do not signal a violation of one's long-term goals, such as equally tasty but healthy products. Therefore, to more confidently establish whether the increased consumption in Study 2 can indeed be attributed to self-licensing, Study 3 aimed to extend the previous findings by presenting participants with equally likeable snacks, but diverging the amount of goal threat these products constituted (thus equally tasty but healthy and unhealthy food). In addition, to investigate the independent effect of emotion on indulgent behavior we included a control condition that would be exposed to neutral pictures only. Finally, to control for the differences in hunger observed in Study 1, Study 2 standardized satiety ratings by requiring participants to abstain from eating two hours beforehand.

We expected participants who were highly aware of having experienced a negative emotional event to consume more of the indulgent food than participants who were less aware of the emotional event, or participants in a neutral state. As explained above we did not expect that possessing a justification would influence consumption of healthy products.

Method

Participants. Sixty-one female university students participated in this study for course credit or €6,-. Four participants who were outliers ($SD > 3$) on one of the dependent variables (unhealthy food consumption: $n = 2$; healthy food consumption: $n = 1$; or both: $n = 1$) were removed from analysis resulting in a final sample of 57 participants who were randomly assigned to one of three conditions (neutral control condition: $n = 18$; low-awareness condition: $n = 20$; and high-awareness condition: $n = 19$) with a mean age of 22.23 ($SD = 4.28$).

Procedure. The procedure was largely similar to Study 2, except that extra control variables were included. To standardize satiety rates participants were not

allowed to eat two hours beforehand, which was checked in a funneled debriefing procedure after the experiment. Awareness manipulation, manipulation checks, and affect measurement, were similar to Study 2, except that in the neutral condition participants were presented with neutrally valenced pictures instead of negative pictures. In addition to two types of hedonic but unhealthy snacks, the bogus taste test also included two types of tasty yet healthy snacks.

Materials.

Awareness manipulation. Negative affect was induced similarly as in Study 2, with some minor adjustments. Instead of eight negative pictures, participants were presented with 20 negative pictures with normative valence ratings under 3 to induce negative affect in both negative affect conditions. In the control condition participants were presented with 20 neutral pictures (120 ms; valence ratings between 4 and 5) followed by a (neutral) mask for 120 ms. Thus, people in the low-awareness and neutral condition saw both the stimulus pictures and masks very briefly; while the high-awareness condition observed the negative stimuli longer.

Manipulation check. Awareness of the emotional event was established similarly as in Study 2, with the number of correctly remembered negative pictures ranging from 0 (none of the negative pictures remembered) to 20 (all negative pictures remembered).

Assessment of negative affect. Instead of using an affect scale ranging from positive to negative, negative affect was established separately before (T0) and after (T1) the manipulation, using 7 point Likert scales ranging from 0 (*not at all negative*) to 7 (*very negative*).

Food intake. Participants tasted four different kinds of snack food: two types of healthy food (cheese-flavored rice crackers and grapes) and two types of unhealthy food (potato chips and M&M's)². This time the taste test was presented as a test of taste perception and the participants were required to indicate how intense they perceived the various snacks to be on a number of dimensions such as sweetness, saltiness, crispiness, freshness. The amount of calories for the healthy foods and unhealthy foods were summed to provide a total measure of healthy and unhealthy snack consumption. As the mean amounts of calories of snacks consumed were skewed, they were natural-log transformed before

² Prior research has established that grapes and M&M's are rated as equally tasty, yet differed their ratings of healthiness (Goldfield & Legg, 2006; Zellner et al., 2006). A pilot study under 16 female university students indicated that chips ($M = 4.25$, $SD = .70$), and cheese-flavored rice crackers ($M = 3.88$, $SD = .64$), were rated as equally tasty, $F(1, 15) = 1.24$, $p = .28$, yet the cheese-flavored rice crackers ($M = 3.50$, $SD = .76$) were perceived as healthier than chips ($M = 1.50$; $SD = .54$), $F(1, 14) = 37.33$, $p < .001$, $\eta_p^2 = .73$.

analysing the data. For the ease of interpretation, means will be reported in calories.

Hunger. The same method as Study 2 was used to assess hunger (Cronbach's $\alpha = .78$). As an additional control participants were asked to indicate how long ago their last meal had been (in hours).

Eating expectancy. The 'Eating Helps Alleviate Negative Affect' subscale of the EEI (Hohlstein, 1998; Cronbach's $\alpha = .91$) was used again to control for potential emotion regulation motives.

Results

Randomization check. Separate ANOVA's were performed with condition (high-awareness vs. low-awareness vs. neutral control) as the independent variable and age, eating expectancy, time since last meal and baseline negative affect as dependent variables. No significant effects were observed (p 's > .29), indicating successful randomization.

Manipulation check. An ANOVA with condition (high-awareness vs. low-awareness) as independent variable and number of remembered negative pictures revealed a significant effect, $F(2,54) = 72.70$, $p < .001$, $\eta_p^2 = .80$. In the high-awareness condition participants reported to have seen more negative pictures ($M = 10.50$, $SD = 3.50$) than in the low-awareness condition ($M = 3.30$, $SD = 1.40$).

Assessment of negative affect. Negative affect was subjected to a 2 (Time: before and after affect induction) X 3 (Condition: high-awareness vs. low-awareness vs. neutral control) mixed-design ANOVA with time as within-subjects factor. The interaction effect between time and condition did not reach significance, $F(2,54) = 2.29$, $p = .11$.

The analysis revealed a main effect of time, $F(2,54) = 17.50$, $p < .001$, $\eta_p^2 = .25$, with more reported negative affect after the manipulation (T1: $M = 2.88$, $SD = 1.10$) than before the manipulation (T0: $M = 2.49$, $SD = 1.07$), and a marginally significant overall effect for condition, $F(2,54) = 2.80$, $p = .07$. Although this effect was marginally significant, the ANOVA main effect may provide an overly conservative test of our hypotheses, which is more appropriately tested by planned comparisons. These tests revealed that the high-awareness condition ($M = 3.16$, $SD = 1.07$) and the low-awareness condition ($M = 3.15$, $SD = 1.18$) did not differ in negative affect, $p = .86$, as was intended, but that the two negative conditions both reported significantly more negative affect than the neutral condition ($M = 2.27$, $SD = .83$), both p 's < .05. The manipulation of affect was thus successful.

Hunger. An ANOVA with condition as independent variable and hunger as dependent variable revealed no significant effect of condition, $p = .94$. The standardization of hunger thus had been successful.

Food intake. A MANOVA with condition as independent variable and amount of calories consumed of healthy and unhealthy snacks revealed a

significant multivariate effect of condition, $F(2,54) = 5.61$, $p < .01$, $\eta_p^2 = .17$. Univariate analyses showed that only the effect for unhealthy snack consumption reached significance, $F(2,54) = 4.47$, $p < .01$, $\eta_p^2 = .14$. The results for healthy snack consumption did not reveal a significant effect of condition, $p = .51$, indicating that the conditions did not differ in the amount of healthy snacks they consumed.

Planned comparisons revealed that participants in the high-awareness condition had consumed significantly more of the unhealthy snacks ($M = 240.61$, $SD = 168.32$) than in both the low-awareness ($M = 171.91$, $SD = 121.22$), $p < .01$ and neutral control condition ($M = 136.65$, $SD = 100.88$), $p < .05$. The low-awareness condition and the neutral control condition did not differ in their unhealthy snack consumption, $p = .51$.

Discussion

Study 3 replicated the findings of Study 2 by demonstrating that participants who were more aware of the negative emotional event consumed more unhealthy snacks than participants who were either less aware of the cause of negative affect or did not experience negative affect. What's more, this difference in consumption was only observed for 'forbidden' snacks, whereas for snacks that were tasty but not goal threatening -and therefore not dependent on justifications- consumption did not differ across the conditions. Moreover, the lack of difference in consumption between the low-awareness condition and neutral control condition suggests that emotions do not always interfere directly with one's long-term goal pursuit, as is commonly assumed.

Study 4

Study 4 aimed to replicate the previous findings while including more stringent control measures. Most notably, even though one can never truly rule out awareness of emotions due to the idiosyncratic nature of the emotion experience, asking people to report their emotional state will direct people's attention to their current feelings. Therefore, as the IAPS pictures are validated and the two previous studies have demonstrated that the priming procedure reliably evokes negative affect, in Study 4 participants were not required to report their current affect. Merely varying the degree of awareness of the cause of the negative affect but omitting the necessity to report on their feelings, allowed for the best possible way to rule out awareness of negative affect in the low-awareness condition. In addition, while the previous two studies only included females, expecting them to have a bigger need to rely on justifications to consume tasty but fattening snacks -and Study 3 found differences only for unhealthy, but not healthy snacks- Study 4 explicitly assessed how forbidden the snacks in fact were for the participants by asking whether they had a weight-watching goal. Only participants who had the goal of

weight management and for whom the unhealthy snacks thus constituted a threat to this goal for which they would need a justification, were included.

Method

Participants. Sixty-four university students participated in this study for course credit or €6,-. Six outliers on unhealthy food consumption, and two participants in the low-awareness condition who reported having seen at least half of the negatively valenced pictures, were excluded from analysis. The final sample thus consisted of 56 participants (neutral control condition: $n = 17$; low-awareness condition: $n = 19$; and high-awareness condition: $n = 20$) with a mean age of 21.48 ($SD = 2.60$). All participants reached the cut-off score for weight watching relevance.

Procedure. The procedure was largely similar to the one used in Study 3. This time however, affect was not assessed after the manipulation. Moreover participants had to indicate to what extent they were currently watching their weight.

Materials. The same materials as in Study 3 were used to manipulate awareness, induce negative affect, and measure hunger ($\alpha = .86$), and eating expectancy ($\alpha = .89$). In addition, to assess weight watching importance, participants had to indicate on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*) to what extent they were currently watching their weight. Only participants with a score of 3 or higher were included.

Results

Randomization check. Separate ANOVA's were performed with condition (high awareness vs. low-awareness vs. neutral control) as the independent variable and as dependent variable age, eating expectancy, time since last meal, and baseline negative affect. No significant effects (p 's $> .14$) were found, indicating successful randomization.

Manipulation check. An ANOVA with condition as independent variable and number of remembered negative pictures revealed a significant effect, $F(2,53) = 54.41$, $p < .001$, $\eta_p^2 = .67$. In the high-awareness condition participants reported to have seen more negative pictures ($M = 7.80$, $SD = 3.32$) than the low-awareness condition ($M = 2.63$, $SD = 2.09$).

Hunger. An ANOVA indicated that the standardization of hunger had been successful, revealing no significant differences in hunger between conditions, $p = .46$.

Food intake. A MANOVA with condition as independent variable and amount of calories consumed of unhealthy and healthy snacks revealed a significant multivariate condition effect, $F(2,53) = 4.55$, $p < .01$, $\eta_p^2 = .15$. Univariate analyses revealed that the condition effect was only significant for unhealthy snack consumption, $F(2,54) = 3.24$, $p < .05$, $\eta_p^2 = .11$, not for healthy snack consumption, $p = .92$.

Follow-up comparisons revealed that participants the high-awareness condition had consumed significantly more of the unhealthy snacks ($M = 96.35$, $SD = 61.23$) than participants in the low-awareness condition ($M = 62.30$, $SD = 37.86$), $p < .05$, and neutral condition ($M = 52.00$, $SD = 23.29$), $p < .05$. Participants in the low-awareness condition and the neutral control condition consumed an equal amount of unhealthy snacks, $p = .48$.

Discussion

In line with the previous two studies, Study 4 again provided evidence for the hypothesis that negative emotions can serve as a justification to license goal-defying behavior. The fact that the previous findings were replicated in the absence of having to report one's emotions, suggests that being aware of the emotional event may be sufficient to justify indulgence.

General Discussion

Contrary to the classic view that emotions leave us powerless in the face of temptation, the present line of studies reveal an alternative pathway by which emotions interrupt goal-directed behavior. By demonstrating that negative emotions are sometimes used in a more deliberate manner to justify having a forbidden treat, the current results suggest that a prototypical 'hot' state, negative emotions, can lead to gratification via a 'cold' route, thereby challenging the conventional idea that we are hijacked by our emotions when self-regulation fails under distress.

We would like to explicitly note that using emotions as a justification should not be equated with the negative connotations normally associated with making excuses. People may not necessarily be out to deliberately fool themselves when using their emotional state to justify a violation of their intentions. It could be that the omnipresent belief that negative emotions instigate indulgent behavior makes people think that indulging when emotional is the default option and thereby becomes a self-fulfilling prophecy. Thus people may be acting on a (implicit) belief rather than deliberately sabotaging their long-term goals. Moreover, the mechanism of self-licensing may be primarily adaptive. Having to justify goal-defiant behavior presumably acts as a break on one's impulses and reduces the chance of automatically succumbing to temptation. However as evidence indicates, self-licensing processes may easily become maladaptive when our impulses dictate our reasoning rather than vice versa (e.g., De Witt Huberts, Evers, De Ridder, 2012c; Kronick & Knäuper, 2010).

The current results are in line with the argumentation put forward by Baumeister and colleagues (Baumeister, Vohs, DeWall, & Zhang, 2007), suggesting that the undermining effect of aversive emotional states must not be sought in direct causation, but instead exert their influence by steering our behavior indirectly. More specifically, Baumeister et al. (2007) theorized that it is the anticipation of emotions that guides our behavior, such that anticipating feeling guilt

or pleasure by indulging may lead us to either avoid or attack the cookie jar. The present results not only demonstrate a novel mechanism by which emotions guide behavior indirectly, but also that the underlying mechanism by which emotions as license operate may closely follow the strategic pathway suggested by Baumeister and colleagues. Self-licensing in general is presumed to rely on the belief that indulging without a proper reason would give rise to guilt (Xu & Schwarz, 2009; Kivetz & Zheng, 2006). This anticipation of negative affect in the form of guilt could lead to the avoidance of gratification altogether, or alternatively, would ensue justification processes, thereby hoping to avoid the anticipated guilt. The findings from Study 1 strengthen this assumption, suggesting that emotions are an adequate justification to mitigate the guilt associated with indulgence. Whether this is in fact the case or rather a reflection of a general belief (Xu & Schwarz, 2009) needs to be corroborated more directly in future research.

At first sight, emotions applied as license to indulge may share some similarities with another important explanation for the link between negative affect and indulgent behavior; indulgence as emotion regulation strategy (Tice et al., 2001), which states that in distressed states people prioritize immediate gratification in order to alleviate their current negative affective state. Although similar in the sense that both mechanisms propose a strategic reaction to negative emotions, the two explanations differ on a crucial point however. Whereas for indulgence as emotion regulation tool, hedonic consumption is a means to achieve a desired emotional state, with emotions as justification negative emotions are used to satisfy a hedonic desire. While the difference might be difficult to infer from mere observation only, the current studies incorporated several precautions to rule out the indulgence as emotion regulation strategy as an alternative explanation for the observed increase in hedonic consumption. Firstly, it was assessed whether participants had the belief that eating helps manage negative moods, with results indicating that conditions did not differ in the extent they believed that eating would help them alleviate their negative affective state. In fact, the scores on this scale were rather low, further dismissing the possibility that the increased consumption can be explained in terms of emotion regulation goals. Secondly, we attempted to rule out this alternative mechanism by providing participants with food that was similar in hedonic value, yet differed in its degree of forbiddenness. With indulgence as emotion regulation tool, one would predict that in order to regulate emotions and alleviate negative affect, no difference would have been found between the consumption of healthy and unhealthy snacks as they were rated equally palatable. From that point of view, eating more of the healthy option would produce equal mood lifting effects as eating from the unhealthy option. In fact, one would expect even stronger mood lifting effects because feelings of guilt after indulgence could be avoided. However, the data revealed that participants who were provided with a justification only ate more of the snacks that needed to be justified, that is the

unhealthy snacks, a finding that is in line with predictions according to the emotions as apology view. Finally, and as the self-reports of affect indicated in Studies 2 and 3, it can be assumed that both negative conditions were equally negative. The indulgence as means to regulate emotions perspective would predict that the two conditions would not differ in hedonic food consumption, as they both would be equally motivated to ameliorate their current emotional state. By the same reasoning, the indulgence as emotion regulation mechanism would predict a difference in consumption between the neutral and low-awareness negative condition. Nevertheless, the finding that only those participants who were aware of having experienced an emotional event consumed more hedonic snacks, suggests that the results can be attributed to the emotions as license hypothesis.

Having uncovered a previously unexplored route by which emotions lead to self-regulation failure, the question arises how the novel insight revealed in the current studies can contribute to future research and interventions; after all the link between negative emotions and self-defeating behavior remains solid. We believe, although the result of the various mechanisms underlying the relation between negative emotions and regretful behavior may be similar, that the distinction made by this line of research is important. Contrary to the emotions as impulsive view, the current findings suggest that self-defeating behavior during emotional distress is not always unavoidable. That is, people do not necessarily have to be victims of their own emotions as long as they (can learn to) acknowledge when they use their emotions as a justification. This may necessitate more insight in the defining circumstances that determine whether emotions are applied as justification or when they directly interfere with our ability to regulate behavior. Therefore, research should now endeavor to examine the circumstances and factors that determine the route by which emotions influence self-regulatory failure. One such potentially relevant factor could be that the intensity of the emotion to a great deal determines the pathway by which emotions influence self-regulatory behavior. For instance, intuitively it could be assumed that low-intensity emotions, such as those induced in the current line of studies, are more likely to be used as a justification, whereas high intensity emotions would indeed lead to a direct breakdown of the self-control system. In the same vein, presently general negative affect was induced. Perhaps more focused and goal-directed emotions would have yielded different results. Future research is also warranted to investigate the existence and the extent of individual differences in using emotions as a justification. Self-licensing research for instance has revealed that especially people who are prone to feel guilt are more likely to rely on justifications to allow themselves a forbidden treat (Kivetz & Zheng, 2006).

Another question that remains to be resolved is to what extent one needs to be aware of one's emotions in order to license digressing from one's goal. Although from a theoretical point of view, it seems that merely being aware of

experiencing negative emotions is sufficient to license a guilty pleasure, this was not examined in the present studies. For reasons explained in the introduction, manipulating awareness of emotions appeared to be the suboptimal option in the present studies. Future research should therefore determine to what extent awareness of negative emotions determines whether they are used to license a transgression of one's goal. For now however, the results suggest that even merely being aware of the emotional event may be sufficient to induce indulgence.

While there are many more roads to explore, the present findings offer various relevant insights. Firstly, by demonstrating that hot factors such as emotions can also lead to self-regulation failure via a cold route, the current findings present an important contribution to the self-regulation literature. The finding that the reflective system can sometimes yield bad outcomes, suggests that the sharp distinction made by dual-process models of self-regulation is not always tenable. To further our insight into how we sometimes behave against our own good, the current results suggest that self-regulation theories should adapt a more holistic view of self-regulation. What's more, the present findings contribute to the emerging self-licensing literature by uncovering a previously unidentified licensing cue, negative affect.

Finally, the current results offer a tentative explanation for the inconsistent empirical evidence for emotional eating. Whereas the popularity of the expression 'emotional eating' would suggest otherwise, an increase in food intake under distress has mainly been observed in individuals that have some kind of problematic eating behavior such as chronic dieting (restrained eating) in an attempt to lose weight (Greeno & Wing, 1994) but has not been replicated in non-restrained eaters (Adriaanse, De Ridder, & Evers, 2011; Evers et al., 2009). In light of the current findings it could be hypothesized that only people who feel guilty eating tasty but fattening food, such as restrained eaters, may eat when they feel emotional. That is, they eat because they feel licensed to allow themselves an otherwise forbidden treat, and not because overeating is an inescapable consequence of being emotional. Indeed, the observation that participants who were equally negative did not display an increase in hedonic consumption suggests that emotional eaters may in fact not be powerless over their unwanted behavior during negative emotional states. Together, this could explain why negative emotions do not consistently lead to overeating in all populations.

Besides the novel insights provided by the current findings, several limitations should be noted. First of all, the laboratory setting precludes the external validity of the observed pattern. Furthermore, we used a fairly uniform population to test our hypotheses, and the generalizability of the current findings thus needs to be established in other populations. Moreover, only one specific type of indulgent behavior, eating behavior, was investigated in the current studies. More research is needed to confirm whether emotions are used to license other indulgent behaviors

such as shopping, drinking or smoking. For example, the link between negative emotions and drinking could very plausibly be explained by the fact that alcohol is often an effective way to improve one's mood (e.g., Cox & Klinger, 1988). However for other indulgent behaviors, such as procrastination, this seems less likely.

Notwithstanding these limitations, the current findings reveal a hitherto unexplored mechanism by which emotions interfere with goal-directed behavior, ruling out prominent alternative mechanisms such as emotion regulation goals or direct effects, thereby establishing an independent route by which emotions contribute to self-regulation failure.

Together the present findings challenge the conviction that we fall prey to our emotions when we succumb to temptation, instead suggesting that we sometimes actively use our emotions to satisfy our desires, thereby opening up new opportunities to break the connection between negative affect and self-defeating behavior.

Chapter 6

“I did good so now I can be bad”:
Justifications elicit a hedonic orientation in
restrained eaters

Submitted as:

De Witt Huberts, J.C., Evers, C., & De Ridder, D.T.D. “I did good so now I can be bad”: Justifications elicit a hedonic orientation in restrained eaters

Abstract

Justification processes are increasingly being recognized as a factor contributing to self-regulation failure. To date, research on justification processes has demonstrated that people use available justifications to resolve the self-regulation dilemmas instigated by exposure to temptations that are in conflict with a long-term goal. However, much less is known about the impact of justifications in the absence of temptations. In the present paper it is investigated whether having a justification can induce a hedonic orientation without tangible temptations being present. We hypothesized that in people who typically need a justification to indulge, such as restrained eaters, the mere confrontation with justifications could elicit a hedonic orientation in which indulgence becomes salient. Consistent with our expectations, the results of Study 1 revealed that restrained eaters, but not unrestrained eaters, activated hedonic concepts upon reading justification-related sentences compared to neutral sentences. This association was further investigated in Study 2 by testing whether justifications increase attention for hedonic stimuli. Using an eye-tracking task, Study 2 revealed that justification-related sentences increased selective attention for indulgent snacks, compared to neutral sentences. It is concluded that even in the absence of temptations, justifications can orient restrained eaters towards indulgence.

Abundance has replaced scarcity as the root of most societal problems in the Western world. With tempting food around virtually every corner, an attractive purchase just a mouse-click away, television and internet delivering pleasurable distraction around the clock, it is becoming increasingly challenging to resist instant pleasures in the service of our long-term goals. While self-regulation failure is often explained in terms of lacking willpower (e.g., Baumeister, Bratslavsky, Muraven, & Tice, 1998; Gailliot et al., 2007) and impulsive breakdowns (e.g., Heatherton & Wagner, 2011; Hofmann, Friese, & Strack, 2009; Hofmann, Friese, Wiers, 2008; Loewenstein, 1996), research has revealed that justification processes also play a significant role in self-regulation failure (De Witt Huberts, Evers, & De Ridder, 2012a, 2012f; Kivetz & Zheng, 2006). Such justification processes entail making excuses for one’s goal-discrepant behavior before enactment, such that the violation of the long-term goal is acceptable to oneself. For example, the dieter who cannot resist the smells coming from the bakery she passes on her way home, might reason that because she had a tough day at work she is allowed to break her resolutions and buy a tasty treat. Examples like these indicate that by seeking or construing justifications that would allow people to have a forbidden pleasure they violate the long-term goal they endorse.

To date, the facilitating role of justifications in self-regulation failure has only been investigated in situations where confrontation with a temptation generated a self-regulation dilemma between instant gratification and long-term benefits, such as being offered a delicious cake while on a diet. However, it remains unclear whether merely having a justification -in the absence of a tangible temptation- is sufficient to *seek* indulgence. That is, whereas it has been found that tempting situations stimulate the use of justifications (e.g., De Witt Huberts, Evers & De Ridder, 2012c; Kronick & Knäuper, 2010; Mukhopadhyay & Johar, 2009), the opposite route -whether justifications might cue indulgence- has never been investigated. For example, it may be possible that for the dieter having had a tough day at work could already entice her to take a detour and go to her favorite bakery. In the present paper we explore this possibility by investigating whether justifications sensitize people to indulgence without hedonic temptations being present.

Justification processes in self-regulation failure

Evidence for justification processes originates from the literature on judgment and decision making which suggests that people are more likely to make a choice that can easily be justified (Shafir, Simonson, & Tversky, 1993). As the need to choose often creates conflict, decision makers seek and construct reasons in order to resolve the conflict and justify their choice (e.g., Kivetz, 1999; Shafir et al.; Simonson, 1989). When confronted with a typical self-regulation dilemma of gratifying immediate desires versus the pursuit of long-term benefits, people will in

many cases be inclined to pursue the hedonic option, but will only do so when the situation allows them to justify it (Kivetz, 1999; Okada, 2005).

The notion that justifications lead to a preference for hedonic choices in subsequent self-regulation dilemmas is supported by a growing amount of empirical evidence. Providing people with a justification, such as effort (De Witt Huberts et al., 2012a; Kivetz & Zheng, 2006), achievement (Kivetz & Zheng, 2006; Mick & Faure, 1998), altruism (Khan & Dhar, 2006), negative emotional experiences (De Witt Huberts, Evers, & De Ridder, 2012b), or prior restraint (Mukhopadhyay & Johar, 2009) leads to a preference for hedonic over functional choice (e.g., Khan & Dhar, 2006; Kivetz & Zheng, 2006) as well as hedonic overconsumption (e.g., De Witt Huberts et al., 2012a, 2012b) in subsequent self-regulation dilemmas.

To illustrate, participants who had to imagine volunteering in community service were more likely to subsequently purchase a hedonic item (luxury jeans) over a functional one (vacuum cleaner; Khan & Dhar, 2006). Similarly, participants who were under the impression of having exerted more effort consumed more hedonic snacks compared to participants believing their equally exerted effort did not exceed the norm (De Witt Huberts et al., 2012a).

Importantly, justifications have been found to influence the preference for forbidden treats in particular, yet have no impact on equally valued (e.g., Kivetz & Simonson, 2002; Khan & Dhar, 2006; Kivetz & Zheng, 2006) or equally liked options (De Witt Huberts et al., 2012b) that do not constitute a violation of one's long-term goal, suggesting that justification processes are specifically relied upon to allow oneself to temporarily give up on long-term goals.

Further evidence for the facilitative role of justifications in self-regulation failure comes from findings demonstrating that people not only make use of the justifications available to them in a tempting situation, but also actively construe justifications when they are confronted with an attractive yet forbidden product. To illustrate, the degree to which participants felt tempted by a hedonic product determined the amount of justifications they construed to permit themselves the otherwise forbidden pleasure (De Witt Huberts et al., 2012c). Together these findings compellingly demonstrate that self-regulation dilemmas prompt people to seek or construct justifications that will enable them to indulge.

However, with its roots in decision-making research, the role of justifications in self-regulation failure has only been studied in situations where one was already tempted by the forbidden pleasure, employing justifications to resolve the conflict induced by the temptation.

To date it remains unclear whether justifications per se, in the absence of temptations, can sensitize people to seek indulgence. For example, after having done something laudable or having invested effort, people may feel entitled to indulge and consequently seek reward.

We propose that in general, unless people are experiencing a self-regulation dilemma elicited by tempting cues in the environment, potential reasons for indulgence will not have an impact on behavior. That is, a justification is only a justification if it serves to resolve a conflict between immediate gratification and one’s long-term goal. For instance, having exerted effort, a typical justification cue, in itself has little meaning or impact on behavior for people who do not experience a motivational conflict and thus do not need to justify choosing one option over the other. However, in people for whom such self-regulation dilemmas are not only activated by temptations in the environment, but for whom a self-regulation conflict is continuously salient, these normally neutral reasons may always represent a justification cue, even in the absence of temptations. Consequently, a justification by itself may trigger a hedonic orientation in which indulgence becomes salient, or in other words, justifications may become a hedonic prime.

Justifications as hedonic prime

Evidence for how previously neutral factors can acquire motivational properties comes from a variety of studies (Jansen, 1998; Rohsenow, Niaura, Childress, Abrams, & Monti, 1991; Rohsenow et al., 1994; Zironi, Burattini, Aicardi, & Janak, 2006). With regard to eating behavior, for example, it has been found that cues that typically predict food intake, such as the time of day or certain locations instigate a strong desire to eat and even activate physiological responses that prepare the organism for the digestion of food such as increased salivation and insulin release (e.g., Birch, McPhee, Sullivan, & Johnson, 1989; Jansen, 1998; Rogers & Smit, 2000; Van Gucht, Vansteenwegen, & Van den Bergh, 2008; Wardle, 1990; Weingarten, 1984, 1985).

Applied to the present context, this implies the following. As justifications mainly serve to resolve a conflict between instant pleasure and long-term goals, we expect people who continuously experience a conflict between opposing goals to be particularly sensitive to justifications as a means to resolve this conflict. As a result, a justification by itself may already signal that indulgence is allowed. Consequently, we expect that merely having a justification could elicit a hedonic orientation that activates hedonic concepts and directs attention towards possible indulgence.

An example of people who chronically struggle to balance opposing goals are restrained eaters (cf. Stroebe, 2008; Stroebe, Mensink, Aarts, Schut & Kruglanski, 2008). Restrained eaters, also known as chronic dieters, continuously monitor their food intake yet at the same time have strong appetitive reactions to food, which makes them often very unsuccessful in their dieting attempts (e.g., De Witt Huberts, Evers, & De Ridder, 2012e; Stice, Fisher, & Lowe, 2004). For example, it has been shown that exposure to palatable food elicits hedonic thoughts and increases selective attention towards palatable foods in chronic

dieters (e.g., Papies, Stroebe, & Aarts, 2007, 2008). Moreover, restrained eaters respond with higher levels of salivation and experience stronger urges to eat to the sight, smell and thoughts about food (e.g., Brunstrom, Yates, & Witcomb, 2004; Fedoroff, Polivy, & Herman, 1997, 2003; Hofmann, Van Koningsbrugge, Stroebe, Ramanathan, & Aarts, 2010). As a result of this perpetual conflict between their intention to restrict their food intake while at the same time being highly sensitive to the hedonic aspects of food, we expect that restrained eaters are particularly susceptible to rely on justifications to resolve the conflict. Therefore, we propose that in restrained eaters justifications have become a cue for indulgence. In unrestrained eaters, justifications are not expected to have the same significance, as they are not chronically concerned with a goal-conflict regarding their food intake.

In the present paper we investigate the hypothesis that justifications by itself serve as a hedonic prime in restrained eaters by testing the independent effect of justifications in two domains that have been previously related to a hedonic orientation; activation of hedonic concepts and selective attention towards hedonic cues (Papies et al., 2007, 2008).

Present studies

Two studies tested whether justifications serve as a hedonic prime in restrained eaters by investigating whether justifications (a) are cognitively linked to hedonic concepts (Study 1) and (b) increase attention for hedonic food (Study 2) in restrained but not in unrestrained eaters. As we wanted to test the effect of justifications on hedonic orientation, we used measures that assess implicit cognitive (a lexical decision task) and attentional (eye-tracking task) processes. Assessing such implicit processes enabled us to test the on-line activation of hedonic concepts and attentional processes at the initial processing of the justification primes. This allowed us to rule out that the justification-indulgence association was triggered by the confrontation with the hedonic targets, such as hedonic target words in Study 1 or the hedonic visual cues in Study 2, rather than by the mere justification primes like we propose. Moreover, implicit measures are less susceptible to demand characteristics and socially desirable responding (Fazio & Olson, 2003). This is especially relevant among restrained eaters who might be inclined to let their responses reflect their intention to restrain their food intake rather than their actual behavior. As such their restraint standards would lead them to be less responsive towards hedonic food cues in explicit measures than they actually are (e.g., Papies et al., 2007, 2008; Roefs, Herman, Macleod, Smulders, & Jansen, 2005; Stroebe et al., 2008).

The current research will specifically focus on effort-related justifications, as effort seems to be particularly important justifications for hedonic consumption (De Witt Huberts et al., 2012a; Kivetz & Zheng, 2006), making effort and

achievement related justifications particularly useful in investigating their effect on hedonic orientation.

Study 1

Study 1 investigated whether justifications trigger a hedonic orientation in restrained eaters by using a lexical decision task with a priming procedure. To this end, participants were presented with justification-related sentences and neutral sentences. After the final word a lexical decision target was presented requiring participants to indicate whether the target was an existing word or not. The target word was either a hedonic word or a control word. We hypothesized that restrained eaters would activate hedonic concepts in response to justifications, resulting in faster reaction times on hedonic target words if these were preceded by justification related primes than when they were preceded by neutral primes. As unrestrained eaters do not have a strong intention to restrict their food intake and consequently do not need a justification to indulge, we did not expect justifications to be cognitively linked to hedonic concepts in unrestrained eaters.

Method

Participants. Fifty-two female university students participated for course credit or a monetary reward. The sample had a mean age of 20.55 years ($SD = 4.33$) and a mean BMI of 22.60 ($SD = 3.68$). Based on recent insights (Allison & Baskin, 2009), a cut-off score of 24 was used for the Restraint Scale (Herman & Polivy, 1980) to classify restrained and unrestrained eaters. Participants with scores of 23³ or lower on the Restraint Scale were classified as unrestrained eaters and participants scoring 24 or higher were classified as restrained eaters.

As a result, the final groups consisted of 28 unrestrained eaters ($M_{\text{restraint}} = 19.33$; $SD_{\text{restraint}} = 2.99$) and 24 restrained eaters ($M_{\text{restraint}} = 27.29$; $SD_{\text{restraint}} = 3.38$) respectively.

Procedure. Upon arrival, participants were seated behind a computer at individual desks. Instructions and all materials were presented on the computer. For the lexical decision task participants were instructed to read each sentence carefully and to indicate as quickly and as accurately as possible whether the probe word that followed the sentence was an existing word by pressing the corresponding key. The keys corresponding to “word” and “non-word” were counterbalanced across participants. After completing the lexical decision task participants were asked to fill in the Restraint Scale as well as questions about their age, height, and weight. Finally, participants were thanked, paid, and debriefed.

³ As the scales of the translated version of the RS range from 1-5 instead of 0-4 in the original version, the (higher) cut-off score of 24 for the translated version is thus equivalent to the cut-off score of 14 that has been recommended for the original version.

Materials.

Lexical decision task. The activation of hedonic concepts was measured by means of a Lexical Decision Task (LDT) with justification-related or neutral sentences as prime. For sentence presentation a so-called Rapid Serial Visual Presentation (RSVP) procedure was used (Long & Golding, 1993) that has been used before to measure the online activation of hedonic concepts (Papies et al., 2007). In a RSVP the behavior descriptions appear on the screen one word at the time at a rapid and predetermined pace. As we used sentences to describe justifications, this procedure allowed us to control the reading time of the sentence across participants. This enabled us to assess the independent effect of justifications on the salience of hedonic concepts. Using self-paced reading could give participants sufficient time to elaborate on the meaning of the sentences and the hedonic target word, and the directionality of the effect of justifications on the salience of hedonic concepts could not be ensured.

The LDT began with 12 practice trials in order to familiarize participants with the procedure. Each trial consisted of a fixation line in the middle of the screen for 1000ms, followed by the sentence presented word by word, describing either justification related behavior or neutral behavior, each word remaining on the screen for 200 ms and followed by a blank screen for 50 ms. The end of every sentence was marked by a period, after which a letter string, that was either an existing word or a non-word, appeared between asterisks to indicate that this was the target word requiring a lexical decision. All target words were shown until response.

The LDT consisted of 72 trials of which 12 were critical trials. In the critical trials a justification related sentence was followed by a hedonic (eating related) target word (cf. Papies et al., 2007: 'tasty'; 'delicious'; 'delectable'; 'reward'; 'enjoy'; and 'indulge', each shown twice in the critical trials). To prevent the participants from expecting that a justification related sentence would always be followed by an existing word, 12 justification related trials with a non-word targets were added. Of the remaining 48 neutral sentences half were followed by an existing word (either hedonic or neutral) and half by a non-word.

The same format was used for justification and neutral sentences to equalize the structure of all sentences. All sentences start with 'I' or 'my' to enhance participants' identification with the behavior descriptions and were approximately equal in length (5 to 8 words). Justification related sentences described behavior related to entitlement, such as effort or achievement, which has previously been related to self-licensing (Kivetz & Zheng, 2006). For example; "I have worked hard"; "I passed my exams"; "I have accomplished something". To prevent the neutral sentences from creating a sense of personal effort special care was taken that they involved trivial, everyday behaviors that involved as little effort as possible and did not have a strong positive or negative connotation. Examples

of neutral sentences are “I press the door bell”, “I have worn my winter coat”, “I have cut my hair”. To not draw attention to the recurrent appearance of the hedonic words several neutral words and non-words were also shown more than once.

Dietary Restraint. The Restraint Scale (RS; Herman & Polivy, 1980) was used to assess participants' restraint level. The RS aims to assess chronic dieting (restrained eating) (e.g., Herman & Mack, 1975; Ruderman, 1986).

The translated version of the RS consists of 10 items (e.g., “How often do you diet?”; “Do you give too much time and thought to food?”) scored on a five-point scale (1-5), with higher scores reflecting higher levels of restrained eating (the total scores for the translated RS ranged from a minimum score of 10 to a maximum score of 48). The scale had a reliability of .79 (Cronbach's α).

Descriptives. At the end of the experiment participants were asked to provide their age, height, and weight.

Results

Data analysis. Two sentences had to be excluded because they were connected to a target word that led to ambiguous responses (i.e. significantly more incorrect responses with participants indicating it to be an existing word when it was a non-existing word and vice versa). Additionally, a duplicated sentence that appeared twice was removed, leading to a total of 68 remaining trials. None of the removed sentences involved experimental trials (sentences coupled with a hedonic target word).

The main dependent variables were participants' mean reaction times for indicating that the hedonic target words were existing words. Reaction times of trials that participants responded to incorrectly (3.9%, no differences between trial types) or extreme reaction times deviating at least three standard deviations from the mean (2.13%, no differences between trials types) were excluded from analysis.

Main analysis. Reaction times to hedonic target words were analyzed with a repeated measures ANOVA with mean reaction times (justification prime vs. neutral prime) as within-subjects factor and restraint (restrained vs. unrestrained) as between-subjects factor. The analysis revealed no significant main effect for type of prime, $F(1, 50) = 1.79, p = .19$, nor a significant main effect for restraint, $F(1, 50) = 1.14, p = .29$. However, as expected, the analysis revealed a significant interaction effect between restraint level and prime type, $F(1, 50) = 5.70, p = .02, \eta^2 = .10$. Simple main effects indicated that restrained eaters reacted significantly faster to hedonic target words after a justification prime ($M = 690.34, SD = 88.60$) than after neutral primes ($M = 719.47, SD = 135.25$), $p = .05, \eta_p^2 = .16$. Unrestrained eaters did not exhibit a difference in reaction times after the different primes; they reacted equally fast to hedonic words after a justification prime ($M = 678.22, SD = 98.52$) as they did after a neutral prime ($M = 670.02, SD = 103.59$), $p = .31$.

Discussion

Consistent with our hypothesis the results from Study 1 indicated that, compared to neutral primes, hedonic concepts were more accessible after being primed with justifications in restrained eaters but not in unrestrained eaters. The pattern of results reveals that the restraint towards hedonic eating-related concepts normally exhibited by restrained eaters (as demonstrated by high reaction times) was diminished after exposure to justification primes. These results suggest that justifications enhance the accessibility of hedonic concepts, but only in restrained eaters.

Study 2

In Study 2 we investigated whether the association observed in Study 1 also leads to increased attention for hedonic food objects. Previous studies have demonstrated that selective attention towards palatable food is indicative of a hedonic orientation (Lang, Bradley, & Cuthbert, 1997; Papies et al., 2008) and that the incentive salience of a stimulus is associated with increased gaze duration (Berridge, 2005; Castellanos et al., 2009; Franken, 2003; Mogg, Bradley, Field, & De Houwer, 2003; Nijs, Muris, Euser, Ingmar, & Franken, 2010). Using an eye-tracking task we investigated whether exposure to a justification increases selective attention to hedonic food cues.

Based on the findings from Study 1 it was hypothesized that after exposure to justification primes, restrained eaters would display increased selective attention towards tempting food stimuli compared to neutral stimuli. We expected this effect to occur only for pictures of palatable but forbidden food but not for equally palatable foods that do not constitute a goal-threat. As justifications are only needed to allow oneself a forbidden pleasure justifications should only influence selective attention for such forbidden treats but not for products that do not need to be justified. Furthermore, as intrinsically rewarding stimuli such as food are expected to bias attention, comparing the selective attention for forbidden food products with equivalent allowable foods (as opposed to comparing food products with neutral objects) makes a particularly strong test of the justification mechanism. In the present study we therefore showed a picture of an indulgent food product and a healthy equivalent simultaneously while measuring eye movements.

Finally, as Study 1 confirmed that the association between justifications and hedonic concepts is relevant only in restrained eaters, the effect of justifications on attentional processes was only tested in restrained eaters. As an additional validation of restraint, we only included participants who wanted to maintain or lose weight, thereby ensuring that the forbidden foods were in fact off limits for the restrained eaters.

Method

Participants. Twenty-two females who on average wanted to lose 2.29 kg ($SD = 3.08$) participated in exchange for course credit or monetary reward. Two participants whose eye movements could not be calibrated and one participant for whom no data on her restraint status was available were excluded from analyses. The final sample consisted of 19 participants with a mean age of 23.06 ($SD = 6.37$) and BMI of = 20.56 ($SD = 2.50$). The average restraint score was 25.82 ($SD = 4.53$), which was above the cut-off criterion for restraint.

Procedure. Upon arrival, participants received instructions and were seated in front of a computer screen with their chin on a rest. The 60 trials in the eye-tracking task each consisted of two parts. In each trial a justification-related or neutral sentence first appeared on screen. After each sentence a picture of two types of snack food (indulgent and healthy) was presented while eye movements were measured. As a cover story participants were instructed to indicate their preference for one of the two snack options. After the eye-tracking task, participants filled out the Restraint Scale and demographic questions before being thanked, debriefed and reimbursed.

Materials.

Eye-tracking. Each trial started with a central fixation cross (until response) followed by a screen with either a neutral or a justification-related sentence. The prime sentence was followed by a fixation cross (random duration: 300-600 ms), after which a picture with two food products appeared. Participants were instructed to indicate their most preferred snack by pressing the arrow bars, after which a new trial commenced.

During the eye-tracking task, participants were instructed to keep their chin on the rest at 60 cm way from the screen. The stimuli were presented on a 19 inch monitor with a refresh rate of 60 Hz. Eye-movements for both eyes were directly monitored with Easygaze Eyetracking System at a frequency of 52 Hz.

Scores for attentional engagement to the hedonic product were calculated separately for the neutral trials and the justification trials. The dependent variable was the total time (in ms) per trial that the gaze was fixed at the indulgent alternative after either a justification or a neutral sentence. Trials where participants had not fixated on either of the snacks (10.88% of the trials) and trials with extreme scores ($SD > 3$ away from the mean; 1.6% of the trials) were excluded from analysis. As the samples were not normally distributed after removing outliers or transformations we used a non-parametrical test to test our hypotheses. For ease of interpretation we report the mean in addition to the median for each condition.

Justification Manipulation. The 30 justification related and 30 neutral sentences were similar in content and structure to the sentences used in Study 1. The order of presentation was randomized.

Food pictures. Thirty-two pictures of hedonic and neutral snacks were obtained from the Full4Health project. The presentation, angle and perspective of the snacks were standardized. The pictures were pilot tested among 22 female students to obtain ratings of palatability (“How much do you like this product?”) and the goal threat (“How bad for weight management is this snack?”) on a scale ranging from 1 (*not at all*) to 5 (*very much*). Based on these results, 15 combinations of an indulgent snack and a healthier equivalent were made, such that combinations of the two food products presented in each trial were equivalent in palatability yet differed in goal threat (this selection was based on a difference of at least one point). Examples of selected indulgent snacks are: muffins, peanuts, chocolate chip cookies, pizza, and cheese. Examples of healthy alternatives are blueberries, dried fruit, wholemeal raisin cookies, olives, and sushi. The mean rating of palatability of the pictured indulgent snacks was 3.58 ($SD = .61$) and was 3.58 ($SD = .50$) for the healthy alternative. A paired samples t-test indicated that the products were indeed not rated differently for palatability ($p = .98$). The mean score of goal-threat for the indulgent product was 4.26 ($SD = .27$) and was 2.35 ($SD = .38$) for the healthy alternative. The indulgent option was generally rated as more dangerous to weight-management than the healthy alternative, $t(21) = 16.97$, $p < .001$. The presentation of the indulgent and the healthy snacks (left vs. right) in the 15 snack combinations was counterbalanced, resulting in a total of 30 picture trials that were each presented twice.

Results

A Wilcoxon Signed-ranks test indicated that participants generally allocated significantly more attention to the indulgent food products ($M = 1379.42$, $Mdn = 643.03$) than towards the healthy food products ($M = 1109.15$, $Mdn = 582.45$), $z = -2.46$, $p = .01$, $r = .40$.

To examine our hypothesis, attention for indulgent food products after justifications was compared to attention for the indulgent product after neutral sentences. A one-tailed Wilcoxon Signed-ranks test revealed that participants allocated significantly more attention to indulgent food products in justification trials ($M = 1440.73$, $Mdn = 631.93$) than in neutral trials ($M = 1324.62$, $Mdn = 629.24$), $z = -1.77$, $p = .04$, $r = .29$. The hypothesis that justifications increase visual orientation towards indulgent food products was therefore confirmed.

Exploratory analyses with mean gaze duration at healthy snacks in justification or neutral trials did not yield any significant results, $z = .33$, $p = .37$. After a justification participants dedicated an equal amount of attention to the healthy alternative ($M = 1079.20$, $Mdn = 598.61$) as in neutral trials ($M = 1145.80$, $Mdn = 574.78$).

Discussion

Confirming our hypothesis, the findings from Study 2 reveal that in restrained eaters justification primes evoke increased attention for tasty but

forbidden food compared to neutral primes. Such an effect of justifications on attentional engagement was not found for equally likeable yet not forbidden foods. These results are in line with our proposition that in restrained eaters justifications have the ability to elicit a hedonic orientation that directs attention towards indulgence.

General discussion

The present findings indicate that justifications can instigate a hedonic orientation in restrained eaters, enhancing the accessibility of hedonic concepts and directing attention towards indulgent food. Crucially such a sensitization for hedonic cues after exposure to justifications was only observed in restrained eaters. Presumably the internalized conflict between wanting to, but not being allowed to, indulge makes restrained eaters particularly reactive to justifications as they allow them to temporarily reconcile their conflicting motivations. Unrestrained eaters on the other hand do not violate a long-term goal by eating tasty but unhealthy treats and thus are less likely to need a justification for such indulgent behavior. As such, justifications are less likely to be associated with indulgence in unrestrained eaters, as is supported by the findings from Study 1.

These findings have several important implications. The finding that the mere presence of justifications did not elicit a hedonic orientation in unrestrained eaters, suggests that justifications, as expected, mainly serve to resolve self-regulation dilemmas generated by confrontation with temptations. In restrained eaters, however, justifications in themselves could potentially endanger self-regulation by triggering a hedonic orientation, even in the absence of actual temptations. This could imply that relying on justifications to resolve self-regulation dilemmas may become maladaptive in more than one way. Not only does frequently justifying one's goal-discrepant behavior means moving further away from that long-term goal, but also the mere presence of justifications eventually can acquire the potential to sensitize towards indulgence. Considering how easily people rely on justifications, with previous studies having demonstrated that sometimes merely reading about a prior good deed (Khan & Dhar, 2006) or imagining effort (Werle, Wansink, & Payne, 2011) is sufficient to induce self-regulation failure, suggests that a hedonic orientation may easily be instigated. This assumption is further underlined by the findings from the present studies where participants only read justifications, rather than actually have a justification, implying that merely activating the concept of justification is enough to elicit hedonic processes.

The present findings also provide some insights into potential factors that make restrained eaters so unsuccessful in their dieting attempts. While previous studies have found that restrained eaters are particularly vulnerable to external food cues, triggering strong eating-oriented reactions (e.g., Fedoroff et al., 2003;

Papies et al., 2007, 2008), the present studies suggest that justifications may have the same effect. The findings from Study 1 suggest that the restraint they normally exhibit towards hedonic eating concepts, as is reflected in the higher response latencies after neutral sentences, can be undone by exposure to justifications. As such the present studies have identified another cue that may make restrained eaters vulnerable to lapses in restraint.

Some limitations of the present studies have to be noted. Firstly, the independent effect of justifications was presently only investigated in the context of eating behavior. As eating behavior is a typical self-regulatory behavior that many people struggle with on a daily basis, as corroborated by the relatively high incidence of restrained eating, it offered an ideal starting point to test the proposition that justifications per se can serve as a hedonic prime. Theoretically, we assume that frequently justifying forbidden pleasures in another domain may yield similar effects. However, this needs to be tested in future research. Furthermore, testing our hypothesis in a young educated female population limits the generalizability of our findings. Nevertheless, as restrained eaters are predominantly young females, they constituted an appropriate population to test the hypothesis that mere confrontation with justifications would elicit a hedonic orientation in restrained eaters in particular.

The present findings open up interesting new questions that warrant further investigation. For example, it is unclear whether a hedonic orientation as currently observed leads to actual indulgence. Although it is generally assumed that the activation of hedonic concepts and selective attention towards tempting stimuli reflect a motivation to obtain or consume the tempting stimuli (e.g., Custers & Aarts, 2007; Franken, 2003; Lang et al., 1997; Papies et al., 2007, 2008), the shift from hedonic orientation to actual behavior is likely to depend on a myriad of factors, such as opportunity to indulge or factors that may counteract the hedonic orientation. Furthermore, future studies could investigate whether other factors that encompass a hedonic orientation may be influenced by exposure to justifications, such as craving and perhaps even physiological factors. Future studies should also illuminate how this association between justifications and indulgence was established. One possibility is that, by repeatedly relying on justifications to indulge, the link between justifications and indulgence has become so engrained in their behavioral repertoire that justifications have become a conditioned cue for indulgence. Future research should establish whether indeed such associative learning processes are responsible for the association between justifications and hedonic orientation in restrained eaters, or that justifications have acquired the power to elicit a hedonic orientation by means of other mechanisms.

To conclude, in a world full of temptations, relying on justifications to allow oneself a forbidden treat may at first sight seem like an effective break on our hedonic inclinations. However, while past findings have already demonstrated how

“I did good so now I can be bad”

easily such justifications processes become maladaptive, the present findings reveal that sometimes a temptation no longer needs to be present for justifications to be able to exert a maladaptive influence on self-regulation.

Chapter 7

Summary and
general discussion

Few phenomena question the authority of reason over our behavior more than self-regulation failure. As a result, most accounts of self-regulation failure have explained such self-defeating behavior as arising from impulsive factors that undermine our ability to act as we intend. In the present dissertation the conventional notion that self-regulation failure is by default the result of a disabled reflective system was challenged. Instead it was hypothesized that reasoning processes might even contribute actively to self-regulation failure. Specifically, by applying principles from the literature on judgment and decision making to self-regulation, we hypothesized that by looking for supportive justifications sometimes reasoning allows people to engage in behavior that violates their own goals.

In one theoretical review and four empirical chapters it was investigated whether, and to what extent, such justification processes can undermine actual self-regulatory behavior. That is, behavior where people must resist instant gratification for a greater future benefit. Before we sketch out our conclusions and implications of the observed findings, we start off with a brief summary of the main findings in each chapter.

Summary of findings

In *Chapter 2* we presented a theoretical outline of a justification-based account of self-regulation failure and gathered evidence from various domains supporting this account. The main observation derived from this review is that having a justification can facilitate behavior that counteracts one's explicit intentions, norms and values, with empirical evidence demonstrating that justifications play a substantial role in the self-regulation context of gratifying immediate needs versus the pursuit of long-term goals. Moreover, the findings ascribed to justification processes could not be explained by alternative models, suggesting that a justification-based account is a distinct mechanism leading to self-regulation failure. Finally, rather than favoring objectively valid reasons, people seem particularly susceptible to arguments that will allow them to satisfy their immediate desires, thus indicating how justifications can turn out to be maladaptive to self-regulation. These findings suggest that a justification-based mechanism is a relevant candidate to explain self-regulation failure, deserving of greater attention in future research.

In the first empirical chapter, *Chapter 3*, we tested the basic underlying premise of a justification-based account of self-regulation failure by investigating whether self-regulation dilemmas elicit justification processes. Whereas in prior studies examining justification processes in goal-discrepant behavior the assumed justification processes had remained implicit, this was the first study to explicitly demonstrate whether self-regulation conflicts also induce reasoning processes that may facilitate indulgent behavior. Study 3.1 confirmed that the degree to which weight-conscious participants were tempted by an attractive yet forbidden product

(a luxurious chocolate bar) predicted the employment of available justifications, such that when the temptational lure of the forbidden product was larger, participants endorsed more reasons to indulge in the forbidden treat. Study 3.2 extended this finding by demonstrating that participants not only endorsed available justifications, but also actively engaged in reasoning processes in the face of temptation. The results indicated that the degree of temptation experienced by the participants after exposure to the hedonic product determined the number of justifications that participants construed to indulge in the forbidden pleasure. These findings provided important initial support for the hypothesis that when faced with a self-regulatory dilemma, people seek and construct reasons to justify prospective indulgent behavior.

Chapter 4 aimed to test whether justification processes can account for lapses in actual self-regulatory behavior while ruling out important alternative hypotheses, most notably resource-depletion. In two studies it was tested whether an established justification cue, effort, increased the consumption of tasty but unhealthy snacks independently of self-regulation resources, negative affect and visceral states such as hunger and tiredness. An initial study, Study 4.1, revealed that perceiving oneself as having invested greater effort, and thus having a justification, did not lead to a decline in self-control capacity on a Stroop task compared to not having such a justification. However, when the same effort manipulation was followed up by a bogus taste test in Study 4.2, having the justification of greater effort expenditure did increase consumption of unhealthy snacks. Importantly, having a justification influenced hedonic consumption independently of impulsive factors such as negative affect, subjective self-control capacity and hunger level. Together the findings in *Chapter 4* suggest that effort justified the consumption of a forbidden treat, thereby providing an important empirical demonstration of justification processes in self-regulation failure.

Having shown that a justification-based pathway should be taken into account as an explanation for self-regulation failure, *Chapter 5* extended these findings by investigating whether a prototypical impulsive source of self-regulation failure, negative emotions, could also be accounted for by justification processes. Study 5.1 established that negative emotions are a suitable alibi to allow oneself a forbidden pleasure by showing that personal responsibility was discounted when descriptions of self-regulation failure included the emotional state of the protagonist. Three subsequent studies then tested whether emotional events were actually used as a justification to indulge, while ruling out direct emotion effects. Negative emotions were induced by exposing participants to negative emotional pictures. The exposure time was varied between the conditions, thereby manipulating the awareness of the emotional event while keeping negative affect equal across conditions. We hypothesized that only participants who were highly aware of having experienced an emotional event would have a justification to

license gratification, a justification not at the disposal of participants that were less aware of having experienced a negative event. As both conditions would be in the same negative state, this manipulation allowed us to rule out direct emotion effects thereby purely assessing the impact of emotions as justification. Results indicated that, despite being equally emotional, participants highly aware of an emotional event consumed more of tasty but unhealthy snacks compared to participants that were less aware of the event (Study 5.2). The two subsequent studies demonstrated that the highly aware participants only consumed more of forbidden foods, but not of equally palatable but healthy foods (Studies 5.3 and 5.4), suggesting that the awareness of the negative experience was specifically used to justify a guilty pleasure. These results indicate that the impulsive pathway is not the only route by which emotions can lead to instant gratification, instead suggesting that negative emotions are sometimes deliberately used as a justification to indulge. Thereby, the findings in *Chapter 5* demonstrate that a justification-based mechanism can also account for failures of self-regulation that hitherto had generally been classified as impulsive.

In the final empirical chapter, *Chapter 6*, the limits of a justification-based model were explored by testing the power of justifications in the absence of tangible temptations. As the justification-based account in principle assumes that people must experience a self-regulation conflict to resort to justifications, two studies explored whether for people for whom a self-regulation conflict is always salient, such as restrained eaters, merely having a justification is sufficient to invoke a hedonic orientation and to seek indulgence. Study 6.1 indeed revealed that justifications activated hedonic concepts in restrained eaters. Unrestrained eaters however did not exhibit this cognitive link between justifications and indulgence. Study 6.2 then further corroborated this association in restrained eaters by revealing that, compared to neutral sentences, justifications increased selective attention for tasty but forbidden food. Together the findings in *Chapter 6* suggest that, whereas in general justifications undermine self-regulation only when the presence of a temptation overshadows one's long-term ambitions, justifications could even be detrimental in the absence of temptations for people who continuously struggle with a self-regulation dilemma by triggering a hedonic state of mind.

In sum, the empirical findings reported in this dissertation reveal that confrontation with tempting hedonic products may elicit reasoning processes to justify indulgence in the forbidden treat. Such justification processes elicited by temptations can facilitate self-regulation failure and cannot be accounted for by other explanations of self-regulation failure. The finding that justification processes can also explain failures in self-regulation that have traditionally been labeled as impulsive further delineates the importance of a justification-based account as an explanation for self-regulation failure. Importantly, justifications only have an impact

on guilty pleasures, but do not influence performance in neutral self-control tasks (e.g., a Stroop task) or the consumption of equally attractive products that do not constitute a goal-violation. This suggests that a justification-based account is particularly relevant in situations where goal-striving is compromised by the hedonic promise of a temptation. From this follows that experiencing a self-regulation dilemma between opposing forces is a prerequisite to trigger justification processes. Whereas this self-regulation conflict is generally elicited by temptations in the environment, for some people this conflict is permanently accessible. As a result, possessing a justification triggers a hedonic orientation in these people, even without a temptation being present. Together, the findings reviewed and analyzed in the present dissertation provide compelling arguments that integrating a justification-based account into models of self-regulation is crucial in capturing the full scope of processes underlying self-regulation failure.

Reconsidering the causes of self-regulation failure

By questioning two fundamental assumptions of classic self-regulation models, the novel route to goal-derailment outlined in this dissertation makes an important conceptual contribution to our understanding of why and how self-regulation failure occurs. Together these insights present a theoretical shift that advocates a more comprehensive view of self-regulation that moves beyond the strict duality of contemporary models of self-regulation. We will discuss each of these insights and their implications for models of self-regulation in turn.

Firstly, the findings reveal that self-regulation failure is not by default the result of the impulsive system taking precedence over the reflective system. Instead the findings suggest that even when people have the capacity to act in accordance with long-term goals, they may not always act upon them when there is a justification to do so. As such, the presented findings challenge the general assumption that self-defeating behavior is the result of a breakdown in personal control. Further questioning the inherently impulsive nature of self-regulation failure is the observation that even failures of self-regulation generally labeled as impulsive, such as negative affect, may also exert their influence via a justification-based route. In fact, states that are typically classified as impulsive may be particularly suitable for justifying behavior that otherwise would be off-limits. As the accountability for behavior is typically discounted when it is perceived to be under the influence of strong impulses (Pizarro, Uhlmann, & Salovey, 2003), 'impulsive' reasons may be particularly plausible and thereby functional justifications that reduce judgments of responsibility for that behavior. As a result, such 'impulsive' reasons may offer an ideal compromise that allows us to indulge in a forbidden treat without bearing the negative consequences that this behavior could engender (e.g., guilt or a damaged self-image).

This new understanding also has implications for the interpretation of past findings. For example, to date, self-regulation failure after prior effort or restraint has been attributed to the depletion of limited self-control resources (e.g., Muraven & Baumeister, 2000). However, in light of the present findings, failure in these cases may not necessarily be the consequence of resource depletion, but can also be accounted for by justification processes. Therefore, beyond actual effort or restraint, it is relevant to take people's perceptions of prior effort and restraint into consideration, as the latter may make people feel entitled to indulge, leading to self-regulation failure through justification rather than depletion. Taking it one step further, it could even be speculated that justification processes moderate the impact of resource depletion on behavior, so that feelings of entitlement determine when previous efforts at self-control undermine subsequent attempt at self-control. This speculation is supported by other recent findings that suggest that top-down processes, such as perceived resource depletion (Clarkson, Hirt, Jia, & Alexander, 2010) or lay theories about willpower as a limited resource (Job, Dweck, & Walton, 2010), modulate the effect of resource depletion. Along the same lines, other conventionally impulsive determinants of self-regulation failure may operate via a justification-based mechanism. For example, self-regulation failure under emotional distress may not always be the result of emotional forces rendering us powerless over our behavior. Instead, the emotional experience may be strategically employed as a justification to indulge. With these insights, a justification-based account provides a valuable corrective to the emphasis on impulsive processes in self-regulation failure.

Secondly, by demonstrating that reasoning processes can contribute to self-regulation failure, the research in the present dissertation challenges the general assumption of self-regulation models that reason acts as a break on our impulses. Instead, the findings suggest that the reflective system tends to justify, rather than inhibit, our impulsive tendencies.

This observation fits with recent theorizing that has advocated rethinking the function of reasoning (Mercier & Sperber, 2011). This new take on reasoning suggests that, rather than improve knowledge and make better decisions, the main function of reasoning is argumentative. In other words, reasoning does not serve to reach a conclusion, instead it serves to *justify accepting* a given conclusion. As such these authors, among others (e.g., Haidt, 2001), have argued that reasoning is used to justify automatic inferences coming from the impulsive system (e.g., attraction towards a hedonic stimulus). In line with the current findings this would imply that the automatic affective reaction of being smitten by a delicious looking apple pie selectively engages the person's reasoning processes towards justifying its consumption. It therefore seems that in self-regulation failure, reasoning falls short of delivering decisions that are in line with our best interests not only because

our reasoning capacities are impaired, but also because people systematically look for arguments to justify their actions.

This observation has important implications for many models of self-regulation that are geared towards promoting goal-directed behavior, as they are based on the assumption that reasoning is solely guided by abstract principles. For example, most expectancy value theories and models of goal-striving such as the theory of reasoned action (Fishbein & Ajzen, 1975), its derivative the theory of planned behavior (Ajzen, 1991) and the protection motivation theory (Rogers, 1975) assume that an individual's behavior is the result of a logical and rational reasoning process where people systematically weigh the options and outcomes. These models fail to consider, however, that reasoning does not happen in a vacuum. As the present findings make clear, reasoning does not yield stable norms or standards that transcend our impulses, but is in itself vulnerable to more immediate motivations, thereby turning our reasoning faculties into a potential liability for effective self-regulation.

By showing two fundamental assumptions of self-regulation models under a different light, the evidence for a justification-based pathway of self-regulation suggests that classic models of self-regulation may have painted a biased picture of self-regulation, putting too much emphasis on impulsive explanations for self-regulation failure and on reflective processes to overcome temptation. The present findings make clear however, that alternative routes are possible. In addition to the outlined reflective pathway to self-regulation failure, this notion is further supported by recent findings demonstrating that, conversely, automatic processes can contribute to self-regulatory success. Studies in the context of counteractive control theory (Fishbach, Friedman, & Kruglanski, 2003), for instance, show that an encounter with a temptation can automatically activate one's long-term goal, thereby facilitating effective self-regulation (Fishbach et al., 2003; Kroese, Evers, & De Ridder, 2009, 2011). Together these findings imply that by assigning impulses a primary role in self-regulation failure and emphasizing reflective processes as the key to overcome temptation, models of self-regulation in their current form may fall short in explaining the full scope of processes underlying self-regulation.

As such, the mounting evidence that both success and failure can be explained by processes in both systems, suggests that it may be more fruitful to take up a more comprehensive conceptualization of self-regulation that takes into account multiple routes to self-regulatory success and failure. This view fits with a broader trend emerging in the literature that supports a more holistic view of self-regulation. For example, established assumptions regarding self-control resource theory (Muraven & Baumeister, 2000) are also increasingly being challenged, with evidence indicating that sometimes self-control is required for 'bad' behavior, such as overcoming the initially aversive taste of alcohol or nicotine (Rawn & Vohs,

2011), and that states of resource depletion can sometimes generate adaptive behavior (Salmon, Fennis, De Ridder, Adriaanse, & De Vet, 2012).

In all, the evidence for a justification-based mechanism represents a shift from the dualistic opposition between impulses and reflection that has dominated the self-regulation literature for the past decades. Whereas these classic approaches have pitted indulgent inclinations against reasoned choice, and behavior was assumed to be determined by the subordination of one system over another, a justification-based account of self-regulation failure reflects a greater interplay between the two systems. That is, beyond reason dominating our impulses or vice versa, the supportive evidence implies that our indulgent inclinations also pervade our reasoning. If anything, the present findings suggest that self-regulation failure is the result of a biased, rather than an impaired, reflective system.

The current findings thereby emphasize the necessity to bridge the impulsive-reflective dichotomy and realize that much of self-regulatory behavior results from the interplay between impulses and reflective processing. While this shift has been evident in other fields such as judgment and decision making, the present findings reveal how studying the interplay between impulse and reflection could advance the understanding of self-regulation.

Implications for self-regulation

The substantiation of a justification-based account also has implications on a broader level. The finding that sometimes we indulge through reason rather than impulse goes against the common conception that impulses are unwanted forces that are passively experienced. Instead, it seems that sometimes we are still in charge when we fail to self-regulate. In other words, we are not reactive puppets, reacting to bottom-up influences in spite of ourselves. Instead we seem to actively deal with our impulses, sometimes accommodating them -leading to self-regulation failure- and sometimes resisting them, resulting in self-regulatory success.

This is not to suggest that justification-induced self-regulation failure is exclusively the result of top-down processes. In other words, relying on reasons to indulge is unlikely to be a premeditated act of deliberate self-sabotage. Speaking against such a purely rational top-down process for example is the finding that a justification in itself -possessing a reason that would theoretically allow one to behave against one's intentions- does not influence self-regulatory processes, unless a goal conflict is continuously salient (e.g., restrained eaters, Chapter 6). That is, in the absence of temptation, purely rational norms or rules are unlikely to lead to goal violations. Instead, initial affective input is required before justification processes come into play. Once a hedonic urge has been triggered, the reflective system can either resist it or, as argued by a justification-based account, facilitate

it. Rather than a premeditated act to violate one's goals, justification processes, then, are a response to tempting stimuli in the environment.

In this sense, the involvement of an active self, even in self-regulation failure, provides a more optimistic outlook on human self-regulation abilities than the view currently endorsed in models of self-regulation. Whereas the latter suggests that at some point, for example after initial acts of self-control, while being distracted, or in an emotional state -all of which are part and parcel of daily life- self-regulation failure is inevitable, a justification-based pathway suggests that we still have the capacity to self-regulate. A reflective pathway to self-regulation failure may thereby be more amenable to change, and therefore creates opportunities for interventions that target self-regulation failure.

Taken one step further, it could even be argued that relying on justifications to indulge, albeit responsible for self-regulation failure in the short-term, may be adaptive in the long-term. After all, in a world filled with temptations, people cannot resist all the time. Relying on justifications to indulge may be the most constructive way to deal with the ubiquitous temptation that surrounds people, as it would allow them to satisfy their hedonic needs once in a while, while retaining a sense of control. As such, indulging through reason may give them a vital sense of self-efficacy which enables them to resist subsequent temptations. Or, in other words, rather than being at the mercy of fixed unchangeable processes, justifications allow people to feel in charge of their behavior, which also enables them to take responsibility for their behavior.

Limitations

Several limitations of the presented studies should be noted. A first and important limitation is that, with the exception of the studies reported in Chapter 3, the justification processes have not been asserted explicitly and none of the studies involved spontaneous justification processes. Instead, participants were either provided with a justification or asked for hypothetical reasons. Thereby, the assumed justification processes have been inferred, rather than actually recorded. However, as has already been noted in Chapters 2 and 3, explicitly establishing justification processes comes with substantial limitations. Mainly, asking for their justifications in the heat of the moment may make people self-conscious of their discrepant behavior, thereby interfering in the actual process. The alternative option, establishing justification processes afterwards, is also not feasible as it may yield justifications as a result of cognitive dissonance caused by the violation of personal norms, rather than justification processes *ex ante*. As such, it is difficult to establish explicit justification processes, which is further complicated by the fact that asking participants explicitly to name justifications may lead to socially desirable answers rather than reflect the actual justifications they relied upon. In fact, justification processes in daily life are more likely to result from an internal

dialogue rather than take the form of an explicit statement. Therefore, providing people with universal and widely known justifications, such as effort or negative experiences, seemed the most appropriate and realistic way to experimentally study the influence of justifications on behavior. It should be noted that the difficulties of assessing explicit and spontaneous justification processes are not solely confined to the domain of self-regulation, but is a difficulty inherent to the subject.

A second limitation is that all studies have been conducted in a selective sample of young highly educated females. While drawing from such a specific population comes with limitations concerning the generalizability of the observed findings, this group formed an ideal population to test our hypotheses in the context of eating behavior. Investigating whether justifications are relied upon to violate a long-term goal seemed legitimate in a population that is known to be concerned about their weight (Wardle, Haase, & Steptoe, 2006), and thus has a long-term goal concerning eating behavior. As the premise of a justification-based account is that justifications are relied upon to allow violations of a long-term goal, we would not expect justifications to have an effect on the eating related behavior of people who do not have a weight-watching goal in the first place. Nevertheless, we do not expect the current results to be limited to eating behavior and weight-conscious participants. In any situation or context where an immediate temptation is in conflict with a person's long-term considerations, we expect that justification processes can become involved in self-regulation failure.

A third limitation that should be mentioned is that all studies were conducted in lab settings. As the studies in this dissertation were the first to study justification processes in self-regulatory behavior, it was of great importance to be able to make causal interpretations, which are done better in a controlled lab setting as it allows ruling out alternative explanations. However, as with most studies concerning eating behavior, it is likely that the eating behavior of participants was influenced by the constrained setting of the laboratory. Notably though, various precautions were made to minimize experimenter demand effects. All studies used cover stories to hide the actual purpose of the study and deployed measures that were either among filler items or unbeknown to the participants. For example, in all studies measuring actual eating behavior, participants were unaware that the quantity of food consumed was measured. Furthermore, we applied careful debriefing procedures to probe whether participants had been aware of the connection between the allegedly unrelated studies or the purpose of the study, increasing our confidence that the participants were not aware of the specific hypotheses and had not adjusted their behavior accordingly. Nevertheless, despite all the precautions taken, studies that investigate justification processes in daily life are certainly needed to corroborate the external validity of the presented findings.

Future directions

As the studies reported in this dissertation are amongst the first studies that have investigated justification processes in self-regulatory behavior, a justification-based explanation of self-regulation failure gives rise to many new questions. First of all, the present findings warrant empirical attention towards the understanding of justification processes. Of main concern in this regard is to gain insight into the mechanism(s) that drive a justification-based process of self-regulation failure. Several possibilities, including motivated reasoning, prefactual cognitive dissonance, anticipated affect and a reinforced self concept, have already been discussed in Chapter 2. What most of these potential mechanisms have in common is that they seemingly allow a person to cross their own lines while minimizing the psychological harm normally associated with such discrepant behavior. Whether this is indeed the driving principle behind justification processes, and whether this has the speculated beneficial effect, remains to be explored. Another issue that needs clarification, and already touched upon in Chapter 2, concerns the intentionality of the justification process, that is, to what extent people deliberately use justifications in order to move away from their long-term goals. Although the present studies hint towards the strategic use of justifications to license self-regulation failure, further research is definitely needed to determine the degree of intention involved in the process. Further, it should be investigated whether some people are more inclined than others to rely on justification processes and thereby are more likely to fail at self-regulation via a reflective pathway. It could be that certain personality traits, such as a need for cognition or desire for control, could feed the need to rationalize one's irrational behavior, but it is also likely that a tendency to rely on justifications is determined by certain attitudes towards long-term goals, as is suggested by the findings in Chapter 6 with regard to restrained eating.

The presented evidence for the involvement of reflective processes in self-regulation failure also opens up various new research directions that are crucial for advancing our understanding of self-regulation. Firstly, as insight into the underlying mechanism is essential to effectively intervene in the process, an investigation of the factors that determine which of the various potential routes is taken when self-regulation fails is warranted by these novel insights. Of prime importance is that these endeavors take notice of the interplay between reflective and impulsive processes. A second important research avenue put forward by the presented findings is to elucidate when the reflective system is mobilized to resist, and when to indulge in, a temptation. Presumably, the strength of the temptation-goal conflict to a great deal determines whether the reflective system helps or hurts self-regulation. It could be speculated that weak conflicts, for example in cases with a strong temptation and a weak goal or vice versa, will lead the reflective system to resist rather than justify indulgence. However, when the conflict of competing

temptations and goals is greater, one might be more likely to revert to justification processes than trying to resist the tempting treat. Future studies should investigate the relative importance of temptation strength (e.g., Kroese et al., 2009, 2011) and goal importance in guiding the reflective system towards self-regulatory success or failure.

Finally, from a methodological perspective, this new conceptualization of self-regulation failure calls for new measures that can determine the various underlying processes of self-regulation success and failure. After all, the new findings no longer allow equating the result with the outcome, a matter that is further complicated by evidence indicating that similar cues (e.g., negative emotions, prior restraint) can elicit self-control failure via different pathways.

As research on the subject is only in its infancy, the validation of a justification-based account lays out many novel routes to explore and new questions to answer. Ultimately, however, answering these questions will reveal a richer understanding of the ways in which people act against their better judgment. By identifying new causal determinants of self-regulation failure, these insights will offer new targets for developing strategies to curb such self-defeating behavior.

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Nederlandse samenvatting (Dutch summary)

De stijgende prevalentie van welvaartsproblematiek zoals overgewicht, overmatig alcoholgebruik en een groeiende schuldenlast toont aan hoe moeilijk het is om gedrag te reguleren dat weliswaar kortetermijn bevrediging oplevert, maar vaak negatieve consequenties heeft op de lange termijn. Ondanks onze voornemens om nu echt te stoppen met roken, geld te sparen en gezonder te eten, slaan we de aangeboden sigaret niet af, geven we ons spaargeld uit aan de allernieuwste gadgets en nemen we toch het grand dessert aan het einde van een etentje. De oorzaak van zulk zelfregulatie-falen wordt vaak toegeschreven aan impulsieve factoren die ervoor zorgen dat we geen controle meer hebben over ons gedrag. Onze impulsen en emoties winnen het zagezegd vaak van rationele overwegingen in zelfregulatie-dilemma's, wat ertoe leidt dat ons gedrag vaak in strijd is met onze expliciete doelen. Deze algemene opvatting – dat impulsiviteit leidt tot “slecht” gedrag en dat reflectieve processen dit kunnen voorkomen – heeft ertoe geleid dat onderzoek naar zelfregulatie-falen zich de afgelopen decennia voornamelijk gericht heeft op factoren die een weloverwogen beslissing verhinderen, zoals negatieve emoties (Macht, 2008; Witkiewitz & Villaroel, 2009), afleiding (Ward & Mann, 2000) of alcoholgebruik (Hofmann & Friese, 2008). Alledaagse ervaringen suggereren echter dat zelfregulatie-falen niet altijd voortkomt uit impulsief gedrag, maar juist vaak het resultaat is van een overwogen beslissingsproces. Neem bijvoorbeeld de ex-roker die op oudejaarsavond redeneert dat hij op zo'n feestelijke gelegenheid best een uitzondering mag maken en een sigaret opsteekt. Of de lijner die betoogt dat zij wel een beloning verdient na zo'n drukke periode op haar werk en een gevulde koek neemt. Deze voorbeelden laten zien dat zelfregulatie-falen niet altijd een impulsief karakter heeft, maar vaak ook het gevolg is van beredeneerde processen waarbij men gebruik maakt van argumenten om zichzelf een 'verboden' plezier toe te staan. Dergelijke *rechtvaardigingsprocessen* hebben echter nog weinig aandacht gekregen binnen het zelfregulatie-onderzoek. In dit proefschrift is daarom onderzocht of rechtvaardigingsprocessen een rol spelen in zelfregulatie-falen, daarmee dieper ingaand op de observatie dat zelfregulatie-falen niet altijd impulsief is maar dat ook beredeneerde processen kunnen bijdragen aan verbroken voornemens.

Zelfregulatie: Balanceren tussen onmiddellijke verleidingen en verre doelen

Het bereiken van de langetermijn doelen die veel mensen zich stellen, zoals een slank lichaam of een goed gevulde spaarrekening, is vaak niet makkelijk. Dit geldt zeker in de huidige samenleving waar ons vermogen tot succesvolle zelfregulatie danig op de proef wordt gesteld doordat we voortdurend worden blootgesteld aan verleidingen die in strijd zijn met langetermijn doelen. Wat zelfregulatie extra moeilijk maakt, is dat het toegeven aan verleiding vaak onmiddellijke concrete positieve consequenties heeft, terwijl onze langetermijn

doelen vaak onzeker en abstract zijn en pas op de langere termijn profijt opleveren. Een zelfregulatieconflict kenmerkt zich dus door onverenigbare motivaties, waarbij het verlangen voor snelle bevrediging haaks staat op onze langetermijn doelen. Zo zal het meisje aan wie een stuk taart wordt aangeboden een conflict ervaren tussen haar wens om van de lekkere taart te genieten en haar doel om weer in haar oude spijkerbroek te passen. Wanneer zij de onmiddellijke beloning die de chocoladetaart biedt kan weerstaan om haar langetermijn doel veilig te stellen, is er sprake van succesvolle zelfregulatie. Wanneer ze er echter voor kiest aan de kortetermijn verleiding toe te geven -waardoor haar langetermijn doel in gevaar wordt gebracht- spreekt men van zelfregulatie-falen. Het is hierbij van belang om te benadrukken dat er alleen sprake is van zelfregulatie-falen wanneer het gedrag in strijd is met een langetermijn doel dat iemand zich gesteld heeft. Dat wil zeggen, bij iemand die zich tegoed doet aan chocoladetaart is niet per definitie sprake van zelfregulatie-falen; daarvoor zou hij of zij een expliciet doel moeten hebben dat in strijd is met het eten van taart, zoals gewichtsbeheersing. Eveneens kan men niet spreken van zelfregulatie-falen wanneer een roker die niet van plan is te stoppen met roken nog een sigaret opsteekt. Zelfregulatie-falen staat dus los van de vraag of het gedrag (on)verstandig of (on)gezond is, maar heeft specifiek betrekking op de persoonlijke doelen die een persoon zich gesteld heeft.

Klassieke modellen van zelfregulatie: Impulsief falen en reflectief succes

De strijd tussen onmiddellijke bevrediging enerzijds en negatieve langetermijn consequenties anderzijds speelt een prominente rol in klassieke sociaal-psychologische theorieën over zelfregulatie (zie bijvoorbeeld Metcalfe & Mischel, 1999; Strack & Deutsch, 2004). Deze theorieën stellen dat zelfregulatie wordt bepaald door een interactie tussen twee verschillende systemen: een automatisch en reflexief systeem dat wordt gedreven door impulsen, en een rationeel en reflectief systeem dat onze langetermijn overwegingen herbergt. Over het algemeen wordt verondersteld dat een verleiding het impulsieve systeem aanspreekt dat, tenzij het reflectieve systeem de overhand heeft, tot zelfregulatie-falen aanzet.

Van cruciaal belang hierbij is dat de impulsieve processen automatisch en zonder al te veel moeite hun effect op gedrag kunnen uitoefenen, terwijl reflectieve processen inspanning en mentale capaciteit kosten. Als gevolg hiervan is het reflectieve systeem afhankelijk van de cognitieve capaciteit en motivatie waarover iemand op dat moment beschikt. Als deze niet voorhanden of verstoord zijn -het vermogen tot zelfcontrole is tenslotte eindig- is de invloed van het reflectieve systeem beperkt en krijgen impulsen de ruimte om gedrag te sturen. In lijn met deze veronderstellingen is aangetoond dat factoren die processen in het reflectieve systeem ondermijnen, zoals alcoholgebruik (Hofmann & Friese, 2008), negatieve

emoties (Macht, 2008) en een lage werkgeheugencapaciteit (Hofmann, Gschwender, Friese, Wiers, & Schmitt, 2008), de kans op zelfregulatie-falen vergroten.

De veronderstelling van klassieke zelfregulatie-modellen dat verstoringen van het reflectieve systeem verantwoordelijk zijn voor zelfregulatie-falen impliceert dat wanneer het reflectieve systeem intact is, men in lijn met zijn of haar intenties zal handelen. Met andere woorden, aangenomen wordt dat wanneer men tijdens een zelfcontroleconflict voldoende capaciteit heeft voor reflectieve processen, men een weloverwogen en beredeneerde beslissing zal nemen die in overeenstemming is met langetermijn doelen. Deze notie is gebaseerd op het rationele ideaalbeeld dat onze denkprocessen onafhankelijk zijn van onze emoties en impulsen en dat reflectie en logische argumentatie daarom per definitie tot rationeel gedrag zullen leiden. De laatste jaren zijn er echter barsten gekomen in dit rationele ideaalbeeld. In tegenstelling tot het klassieke adagium dat men zich eerst moet bezinnen voordat men begint, toont een groeiende hoeveelheid empirisch bewijs aan dat de beste beslissingen vaak intuïtief genomen worden (zie bijvoorbeeld Dijksterhuis & Nordgren, 2006) en dat emoties cruciaal zijn voor het maken van beslissingen (zie bijvoorbeeld Damasio, 1994). Het afwegen van de voors en tegens en het stimuleren van reflectieve processen kan de kwaliteit van de beslissing zelfs negatief beïnvloeden (Wilson et al., 1993; Wilson & Schooler, 1991). Bovendien blijken onze denkprocessen vaak niet zo objectief te zijn zoals verondersteld in het klassieke beeld van de rationele mens, maar blijkt steeds meer dat onze denkprocessen worden beïnvloed door onze motivaties en gevoelens (Kunda, 1990; Mercier & Sperber, 2011).

Ondanks het groeiende bewijs dat onze reflectieve processen beïnvloed worden door onze impulsen en motivaties, zijn klassieke zelfregulatie-modellen en het daaruit voortvloeiende onderzoek nog steeds gebaseerd op het idee dat reflectieve processen de sleutel zijn tot succesvolle zelfregulatie, waarbij het reflectieve systeem functioneert als rem op reacties vanuit het impulsieve systeem. De recente inzichten dat gedachten en gevoelens elkaar wederzijds beïnvloeden suggereren echter dat het reflectieve systeem zelfregulatie-falen soms juist in de hand kan werken. Gebaseerd op deze recente inzichten stellen wij een additionele verklaring voor zelfregulatie-falen voor die de strikte verdeling tussen het reflectieve systeem als verantwoordelijk voor succesvolle zelfregulatie en het impulsieve systeem als veroorzaker van zelfregulatie-falen in een nieuw daglicht stelt. Deze verklaring stelt dat door rechtvaardigingsprocessen, dat wil zeggen, het zoeken naar argumenten om langetermijn doelen terzijde te schuiven en kortetermijn bevrediging toe te staan, het reflectieve systeem zelfregulatie-falen soms juist faciliteert.

Rechtvaardigingsprocessen: Een reflectieve route tot zelfregulatie-falen

Rechtvaardigingsprocessen spelen een belangrijke rol bij besluitvorming; zo toont onderzoek aan dat mensen de keuze maken die ze het beste kunnen rechtvaardigen (Shafir, Simonson, & Tversky, 1993). Omdat het maken van een keuze vaak conflict oproept, hebben mensen de neiging redenen te zoeken die het keuzeproces gemakkelijker maken (Shafir et al., 1993). De argumenten die mensen hierbij gebruiken zijn objectief gezien echter niet altijd rationeel. In plaats daarvan richten mensen zich vooral op argumenten die overeenkomen met hun voorkeuren en motivaties, met als gevolg dat mensen de beschikbare argumenten flexibel gebruiken om zo hun voorkeur te kunnen rechtvaardigen. Toegepast op een typisch zelfregulatie-dilemma zullen mensen in de meeste gevallen geneigd zijn voor de optie te kiezen die onmiddellijke bevrediging brengt. Als gevolg daarvan zullen ze naar argumenten zoeken die het hen mogelijk maakt om voor de aantrekkelijkste, maar vaak ook 'verboden', optie te gaan. Met andere woorden, zelfregulatie faalt in dit geval door de argumenten die mensen formuleren om het verboden gedrag te rechtvaardigen.

Eerste aanwijzingen dat rechtvaardigingsprocessen leiden tot keuzes voor onmiddellijke en vaak hedonistisch georiënteerde behoeften ten koste van expliciete langetermijn doelen zijn te vinden binnen de context van consumentenonderzoek. In deze studies werd de ene helft van de participanten voorzien van een rechtvaardiging, zoals het doen van moeite (Kivetz & Zheng, 2006), of het vertonen van altruïstisch gedrag (Khan & Dhar, 2006), terwijl de andere helft zo'n rechtvaardiging ontbeerde. Nadien moesten participanten kiezen tussen een functioneel of een luxe product. Uit de resultaten bleek dat participanten die een rechtvaardiging hadden, vaker de hedonistische keuze maakten. Zo leidde bijvoorbeeld het leveren van inspanning ertoe dat mensen eerder een chocoladetaart kozen dan een fruitsalade (Kivetz & Zheng, 2006).

Onderzoeksvragen

Hoewel deze bevindingen een eerste aanwijzing vormen dat rechtvaardigingsprocessen een rol kunnen spelen bij zelfregulatie-falen, zijn er enkele kwesties die nadere studie vereisen. Ten eerste is het faciliterende effect van rechtvaardigingen tot nu toe alleen onderzocht in hypothetische keuzesituaties, maar is er nog weinig bekend over de invloed van rechtvaardigingsprocessen op daadwerkelijk gedrag.

Een tweede belangrijk punt is dat de beschreven studies weliswaar aantonen dat rechtvaardigingsprocessen bijdragen aan hedonistische keuzes, maar het is nog onduidelijk of rechtvaardigingsprocessen ook bijdragen aan maladaptieve zelfregulatie. Waar rechtvaardiging inherent is aan keuzegedrag omdat het bijdraagt aan het oplossen van het keuzeconflict tussen twee opties, is

dit niet zo vanzelfsprekend bij typische zelfregulatievraagstukken. Bij zelfregulatievraagstukken, die meestal niet een uitgesproken keuze tussen een hedonistische en een functionele optie behelzen -zo draait zelfregulatie in de praktijk vaak niet om een keuze tussen chocoaldetaart of fruitsalade, maar om of men de chocoaldetaart overslaat zonder dat er een alternatief voorhanden is of om *hoeveel* men ervan eet- is het conflict minder uitgesproken en daardoor mogelijk ook het gebruik van rechtvaardigingen minder vanzelfsprekend.

Een gerelateerde kwestie is dat veel van de meest prangende zelfregulatie-dilemma's, anders dan keuzes tussen twee producten, onderhevig zijn aan sterke lichamelijke factoren zoals honger of nicotinebehoefte. Dit leidt tot de vraag of men ook onder invloed van dergelijke factoren gebruik maakt van argumenten om toe te geven aan verleiding.

Een derde punt dat conclusies over rechtvaardigingsprocessen als onafhankelijk mechanisme in zelfregulatie-falen in de weg staat, is dat veelgebruikte rechtvaardigingsargumenten zoals inspanning ook tot zelfregulatie-falen kunnen leiden als gevolg van uitputting van de zelfcontrolecapaciteit. Op dezelfde wijze zou ook negatief affect zowel een argument kunnen zijn om jezelf weloverwogen een lekkernij toe te staan, als een uitlokker van impulsieve behoeftebevrediging. Om uitspraken te kunnen doen over rechtvaardigingsprocessen als additionele route naar falende zelfregulatie moeten deze alternatieve verklaringen worden uitgesloten.

Kortom, hoewel rechtvaardigingsprocessen een plausibele verklaring kunnen bieden voor falende zelfregulatie is er nog onvoldoende overtuigend bewijs om vast te stellen of rechtvaardigingsprocessen daadwerkelijk een onafhankelijke bijdrage leveren aan zelfregulatie-falen. Door het effect van rechtvaardigingen op daadwerkelijk zelfregulatiegedrag te toetsen en alternatieve verklaringen uit te sluiten is in dit proefschrift de validiteit van rechtvaardigingsprocessen als verklaring voor zelfregulatie-falen getoetst.

Resultaten

In het eerste hoofdstuk werd een rechtvaardigingsmodel van zelfregulatie-falen geïntroduceerd door een theoretisch kader te schetsen en het bestaande bewijs uit verschillende psychologische onderzoeksdomeinen, zoals moreel gedrag, consumentengedrag en gezondheidsgedrag, bij elkaar te brengen en te evalueren. De belangrijkste conclusie die uit dit overzicht naar voren kwam is dat rechtvaardigingen inderdaad gedrag faciliteren dat niet overeenkomt met iemands expliciete doelen en dat rechtvaardigingsprocessen ook relevant zijn in typische zelfregulatie-dilemma's waarbij onmiddellijke behoeften in strijd zijn met langetermijn doelen. Rechtvaardigingsprocessen konden daarbij worden onderscheiden van andere verklaringen voor zelfregulatie-falen, daarmee suggererend dat er sprake is van een onafhankelijk mechanisme. Tot slot kwam uit

dit literatuuroverzicht naar voren dat mensen bijzonder gevoelig zijn voor argumenten die de mogelijkheid geven die hen toestaan om hun onmiddellijke behoeften te bevredigen. Deze bevindingen suggereren dat rechtvaardigingsprocessen inderdaad een relevante rol kunnen spelen bij zelfregulatie-falen en dat hun rol tot nu toe onderbelicht is gebleven in zelfregulatieonderzoek.

In het eerste empirische hoofdstuk, Hoofdstuk 3, werd een fundamentele aanname voor rechtvaardigingsprocessen in zelfregulatie-falen getest door te onderzoeken of zelfregulatie-dilemma's rechtvaardigingsprocessen oproepen. Terwijl in voorgaande studies de rechtvaardigingsprocessen voornamelijk op indirecte wijze afgeleid werden uit de resultaten, waren dit de eerste studies waarin rechtvaardigingsprocessen expliciet werden aangetoond. De resultaten van Studie 3.1 bevestigden dat de mate waarin mensen die op hun gewicht letten zich verleid voelden door een verboden lekkernij bepaalde in hoeverre zij gebruik maakten van beschikbare rechtvaardigingen om zich deze lekkernij toe te staan. Hoe groter de verleiding, hoe meer rechtvaardigingsargumenten de proefpersonen gebruikten. Hetzelfde patroon kwam naar voren in Studie 3.2 waarbij bovendien werd aangetoond dat de mate van waargenomen verleiding niet alleen bepaalde in hoeverre mensen gebruik maakten van aanwezige rechtvaardigingen, maar dat mensen ook zelf meer rechtvaardigingen bedachten om zichzelf een uitzondering op de regel toe te staan. Samen vormden deze studies een eerste aanwijzing dat bij zelfregulatie-dilemma's reflectieve processen kunnen bijdragen aan zelfregulatie-falen, door het zoeken naar argumenten voor gedrag dat onmiddellijke bevrediging oplevert ten koste van langetermijn doelen.

In het daaropvolgende hoofdstuk, Hoofdstuk 4, werd onderzocht of het beschikken over een rechtvaardiging invloed heeft op prototypisch zelfregulatiegedrag, eetgedrag, waarin alternatieve verklaringen voor zelfregulatie-falen werden uitgesloten. In Studie 4.1 werd uitgesloten dat het beschikken over een rechtvaardiging invloed heeft op de zelfcontrolecapaciteit, gemeten door middel van een Stroop test. In Studie 4.2 werd aangetoond dat het hebben van een rechtvaardiging voor het eten van lekker maar ongezonde snacks, namelijk het uitoefenen van moeite voor een taak, leidde tot een hogere consumptie van deze snacks in vergelijking met het niet hebben van een dergelijke rechtvaardiging. Van belang is dat deze studie liet zien dat dergelijke rechtvaardigingsargumenten tot zelfregulatie-falen leidden onafhankelijk van impulsieve factoren zoals zelfcontrolecapaciteit, negatieve stemming, lichamelijke drijfveren zoals honger en vermoeidheid, en subjectieve beoordeling van zelfcontrole. Deze resultaten suggereerden dat de gedane moeite diende als rechtvaardiging om zich te goed te doen aan de ongezonde snacks. Samen toonden deze studies dat rechtvaardigingsprocessen, onafhankelijk van impulsieve oorzaken, bijdragen aan zelfregulatie-falen.

In Hoofdstuk 5 werd onderzocht of rechtvaardigingsprocessen ook vormen van zelfregulatie-falen konden verklaren die tot nu toe als typisch impulsief werden bestempeld, zoals zelfregulatie-falen onder invloed van negatieve emoties. In vier studies werd onderzocht of negatieve emoties als rechtvaardiging worden gebruikt om verboden gedrag te rechtvaardigen, in plaats van direct de zelfregulatie-capaciteit te verstoren zoals in het algemeen wordt verondersteld. In de eerste studie van dit hoofdstuk kwam naar voren dat een negatieve emotionele staat een geschikte rechtvaardiging is om jezelf een verboden plezier toe te staan. De resultaten toonden dat een beschrijving van zelfregulatie-falen (een lijner eet een heel pak koekjes leeg) als minder negatief werd beoordeeld wanneer verwezen werd naar de emotionele staat van de hoofdpersoon (verdrietig) dan wanneer er niet op de emotionele staat werd gewezen. Deze bevindingen suggereerden dat verboden gedrag onder invloed van emoties minder verantwoordelijkheid en minder schuld met zich meebrengt: emoties worden kennelijk gezien als een goed excuus. In drie daaropvolgende studies werd onderzocht of negatieve emoties inderdaad gebruikt worden als rechtvaardiging voor een verboden plezier, terwijl directe effecten van negatieve emoties werden uitgesloten. Om dit te onderzoeken werd bij participanten een negatieve emotionele staat opgewekt door ze negatieve plaatjes te laten zien. Eén groep zag de plaatjes heel kort, zo kort dat ze deze niet bewust konden waarnemen, terwijl een andere groep de plaatjes langere tijd zag. Hierdoor werd bij beide groepen een even negatieve emotionele staat opgewekt, maar was slechts één groep zich bewust van de oorzaak van hun negatieve stemming (de plaatjes), en beschikte daardoor dus over een rechtvaardiging. De andere groep daarentegen bevond zich weliswaar in een even negatieve stemming, maar was zich niet bewust van de oorzaak van die stemming. Zoals verwacht bleek dat mensen die de negatieve plaatjes bewust hadden gezien meer aten van verboden snacks in een daaropvolgende smaaktest in vergelijking met mensen die zich niet bewust waren van het feit dat plaatjes een negatieve stemming bij hen hadden opgewekt. Bovendien bleek dat het kunnen gebruiken van de negatieve gebeurtenis als rechtvaardigingsargument alleen invloed had op de consumptie van lekkere maar ongezonde -en voor de lijnende participanten daardoor verboden- snacks, maar niet op de even lekkere maar gezonde snacks. Deze studies toonden aan dat negatieve gevoelens niet direct tot zelfregulatie-falen leiden, maar dat ze soms op een bewuste manier worden gebruikt om verboden gedrag te kunnen rechtvaardigen.

In het laatste empirische hoofdstuk, Hoofdstuk 6, werd onderzocht of veelvoorkomende rechtvaardigingsargumenten, zoals gedane moeite, eerdere zelfcontrole of goede prestaties, het gedrag van mensen ook kunnen beïnvloeden wanneer ze niet in een direct verleidelijke situatie zijn. Met ander woorden, er werd onderzocht of het slechts beschikken over een mogelijke rechtvaardiging voor doel-incongruent gedrag, zonder dat er direct een verleiding aanwezig is, ertoe kan

leiden dat mensen op zoek gaan naar verboden beloningen. Aangezien de rechtvaardigingsverklaring stelt dat men alleen gebruik maakt van rechtvaardigingen wanneer men een conflict ervaart tussen kortetermijn behoeftes en langetermijn doelen, werd verwacht dat veelvoorkomende redenen om jezelf iets lekkers toe te staan alleen invloed op gedrag hebben wanneer mensen een zelfregulatieconflict ervaren. Daartoe werden in het bijzonder lijngerichte eters onderzocht en vergeleken met mensen zonder het doel om te lijnen, omdat lijners -die een concreet langetermijn doel hebben maar tegelijkertijd ook overmatig gevoelig zijn voor het verboden voedsel- een chronisch zelfregulatieconflict ervaren ten aanzien van lekker maar ongezond voedsel. Wij verwachtten dat voor deze mensen het beschikken over een mogelijke rechtvaardiging voldoende is om op zoek te gaan naar een verboden plezier. Met andere woorden, het rechtvaardigingsproces wordt dan niet opgewekt door de directe confrontatie met een verleiding (het zien van een taartje wanneer men langs de etalage van de bakker loopt), maar het beschikken over een rechtvaardiging zorgt ervoor dat men op zoek gaat naar een verleiding (naar de bakker toe fietsen om een taartje te halen). In Studie 6.1 werd inderdaad aangetoond dat in lijngerichte eters, maar niet in participanten zonder permanent lijndoel, hedonische concepten werden geactiveerd (zoals woorden die verwezen naar plezier en genot) na het lezen van rechtvaardigingen. Deze bevindingen suggereren dat in lijngerichte eters een automatische associatie bestaat tussen rechtvaardigingsargumenten en beloning. In Studie 6.2 werd deze associatie verder bevestigd door aan te tonen dat rechtvaardigingen ook invloed hebben op de aandacht voor verleidelijke producten: na het lezen van rechtvaardigingen (zoals beschrijvingen van moeite of goede prestaties) bleek dat lijngerichte eters meer aandacht hadden voor lekkere maar ongezonde producten, maar niet voor even lekkere maar gezonde producten, dan wanneer ze neutrale zinnen hadden gelezen. Deze studies tonen aan dat voor mensen voor wie een zelfregulatie-conflict chronisch geactiveerd is, rechtvaardigingen zelfs invloed kunnen hebben op zelfregulatie-falen zonder dat daar de aanwezigheid van een directe verleiding voor nodig is.

Conclusie

Samen tonen de studies in dit proefschrift aan dat verleidingen rechtvaardigingsprocessen oproepen die kunnen leiden tot zelfregulatie-falen. Daarmee wordt aangetoond dat mensen ook via een beredeneerde route toegeven aan verleiding, in tegenstelling tot de aanname in klassieke zelfregulatie-modellen dat falende zelfregulatie via een impulsieve route wordt bewerkstelligd. Ook werd gedemonstreerd dat rechtvaardigingsprocessen invloed hebben op daadwerkelijk gedrag en dat deze gedragseffecten niet verklaard kunnen worden door andere mechanismen. Dit benadrukt het belang van rechtvaardigingsprocessen als onafhankelijke verklaring voor zelfregulatie-falen. Tenslotte tonen de bevindingen

aan dat de invloed van rechtvaardigingsargumenten in het algemeen afhankelijk is van de directe aanwezigheid van een verleiding, waarbij kortetermijn bevrediging in strijd is met langetermijn doelen. Dit geldt echter niet voor mensen die altijd een dergelijk zelfregulatieconflict ervaren: bij hen heeft slechts het beschikken over een rechtvaardiging voor verboden verleidingen, zonder dat de verleiding daadwerkelijk aanwezig is, invloed op zelfregulatie door hedonische gedachten op te roepen en de aandacht te richten op verboden beloningen. Samen vormen deze bevindingen een belangrijk argument om rechtvaardigingsprocessen, naast impulsieve factoren, op te nemen in modellen van zelfregulatie om zo een completer beeld te krijgen van de oorzaken van zelfregulatie-falen.

Implicaties

De bevinding dat reflectieve invloeden in de vorm van rechtvaardigingsprocessen kunnen bijdragen aan zelfregulatie-falen heeft gevolgen voor de klassieke modellen van zelfregulatie. Ten eerste suggereert de bevinding dat zelfregulatie-falen ook beredeneerd kan zijn dat mensen niet altijd hulpeloos ten prooi vallen aan hun hedonische impulsen, maar dat zij ook wanneer zij nog controle hebben over hun gedrag in strijd met hun langetermijn doelen kunnen handelen. Ten tweede tonen de huidige studies aan dat reflectieve processen niet vanzelfsprekend dienen om langetermijn doelen te beschermen tegen impulsieve reacties. In plaats van effectieve zelfregulatie te bevorderen, kunnen reflectieve processen ook een gevaar vormen voor zelfregulatie. Er kan geconcludeerd worden dat klassieke zelfregulatie-modellen en het daaruit voortgekomen onderzoek zich tot op heden te veel gericht hebben op impulsieve verklaringen voor zelfregulatie-falen en op reflectieve processen voor succesvolle regulatie. Om inzicht te krijgen in alle facetten van zelfregulatie en zo interventies te kunnen ontwikkelen die effectieve zelfregulatie stimuleren, is het noodzakelijk dat onderzoek naar zelfregulatie erkent dat zowel impulsieve als reflectieve processen kunnen bijdragen aan zelfregulatie-falen.

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“This too shall pass”

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Curriculum Vitae

Jessie de Witt Huberts was born on February 8, 1981 in Austin (TX) USA. After graduating from high school in 1999, she studied Spanish for a year at the Universitat de Barcelona. In 2001, she started studying Psychology at the University of Amsterdam, specializing in both Social Psychology and Clinical Psychology, and studied one semester at the Freie Universität in Berlin. She worked a researcher and trainer for a public policy research institute in Phnom Penh, Cambodia and as a therapist at a clinic for substance abuse in Amsterdam before starting her PhD project at the Self-Regulation Lab at Utrecht University in 2008 under the supervision of Prof. dr. Denise de Ridder and dr. Catharine Evers.

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