

Oops I Did it Again: Examining Self-Licensing Effects in a Subsequent Self-Regulation Dilemma

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Background: Previous studies have mainly examined the immediate effects of self-licensing on self-regulation failure. The present vignette studies examined what happens when a second self-regulation dilemma is encountered. **Methods:** In Studies 1 ($N = 52$) and 2 ($N = 166$), participants read a vignette in which the protagonist chooses to buy a treat while being on a diet, which was preceded by a license (License condition) or not (Control condition). The self-reported likelihood of indulging again when a second dilemma was presented in the same situation served as the dependent variable. Study 2 included measures of self-regulatory ability (motivation and self-efficacy) and also presented the dilemma in a new situation. **Results:** Study 1 showed that participants were more likely to indulge again after an initial indulgent choice with a license. This was replicated in Study 2, which also showed that self-licensing had no effect on goal re-engagement in a new situation. A marginally significant positive effect of self-licensing was found for self-efficacy. **Conclusions:** The results obtained suggest that self-licensing negatively affects goal re-engagement in the same situation, but not in a new situation. Whether self-licensing maintains or increases feelings of self-efficacy needs to be validated in future studies.

Keywords: dieting, eating behavior, justify, self-licensing, self-regulation failure

INTRODUCTION

Considering the current global obesity epidemic (Taylor, Parento, & Schmidt, 2014), it is evident that many people are not able to successfully regulate their eating behavior. Making healthy food choices is often perceived as a matter of controlling one's impulses: putting a brake on our automatic tendencies to order

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French fries instead of a side salad. Accordingly, many studies have highlighted this automatic route to self-regulation failure (e.g. Strack & Deutsch, 2004; Baumeister, 2002; Tice, Bratslavsky, & Baumeister, 2001). Self-regulation failure can be defined as giving in to momentary allurements (i.e. delicious but unhealthy foods) that threaten the attainment of important long-term goals (i.e. a healthy body weight; Fischbach, Friedman, & Kruglanski, 2003). However, over the last couple of years, it is becoming more acknowledged that self-regulation failure is not always the result of being unable to inhibit impulses (De Witt Huberts, Evers, & de Ridder, 2014a; Fujita, 2011; Inzlicht & Schmeichel, 2012; Gillebaart & de Ridder, 2015). That is, failure to adhere to long-term goals can also stem from deciding to (temporarily) abandon one's goal, by relying on reasons to justify this goal disengagement (see De Witt Huberts, Evers, & de Ridder, 2014b). This phenomenon is referred to as self-licensing: "the act of making excuses for one's discrepant behavior before actual enactment, such that the prospective failure is made acceptable for oneself" (De Witt Huberts et al., 2014a, p. 121). So instead of succumbing to the overwhelming urge to eat those crispy French fries, excuses (i.e. licenses) like "I worked hard this week, I deserve it" or "I feel sad, I need something to cheer me up" can be used to justify this indulgence.

This conception of self-licensing differs from the classic definition of (moral) licensing, as introduced by Monin and Miller (2001; see also Merritt, Effron, & Monin, 2010) who postulated that people who behave in a good (moral) way later feel that they are permitted to engage in undesirable (immoral) behavior. That is, self-licensing as defined by De Witt Huberts et al. (2014a) necessitates a self-regulation dilemma that prompts the need to find and/or use (available) excuses. Hence, this conceptualisation of self-licensing comprises more than performing undesirable actions in response to having earned the right to do so, and states that self-licensing processes are triggered by the experience of a self-regulation dilemma (i.e. a temptation that threatens a long-term goal).

This new conceptualisation of self-licensing, that represents an additional route to self-regulation failure, is supported by a growing body of empirical evidence showing that self-licensing leads to an increase in unhealthy food intake (e.g. De Witt Huberts, Evers, & de Ridder, 2012; Taylor, Webb, & Sheeran, 2013). In these studies, the opportunity to justify indulgence is usually manipulated by providing participants with a compelling license just before they are confronted with food temptations, for example by letting them believe that they exerted effort on a difficult task (De Witt Huberts et al., 2012). Although these immediate effects suggest that self-licensing impedes healthy eating behavior, it remains unclear what happens to self-regulation attempts after people have indulged with a license. In other words, what are the consequences of self-licensing for subsequent goal striving? For example, after ordering French fries instead of a side salad, a new dilemma may arise when deciding between passing on dessert or having a delicious chocolate pudding. On the one hand, it is

plausible that after allowing oneself to indulge, it becomes easier to find or to use similar licenses to indulge again. On the other hand, it can be argued that justified abandonment of a diet goal may boost renewed efforts of goal-directed behavior. Hence, it may be that reliance on self-licensing can go either way and either impair or promote subsequent attempts at self-regulation. The present studies are the first to provide evidence for one of these potential outcomes, considering that as of yet there is no empirical account of the consequences of self-licensing for goal re-engagement. Thus this work also responds to recently voiced concerns about studying behavior in a vacuum and thereby neglecting the possible spillovers to subsequent behavior (see Dolan & Galizzi, 2015). In both studies an experimental vignette design is employed to examine how participants respond to a subsequent self-regulation dilemma when they have previously made an indulgent choice with or without a license.

Self-Licensing and Eating Behavior

Building on studies on moral licensing (e.g. Tiefenbeck, Staake, Roth, & Sachs, 2013; Kouchaki, 2011; Blanken, Van de Ven, & Zeelenberg, 2015) and licensing in the domain of consumer behavior (e.g. Khan & Dhar, 2006; Kivetz & Simonson, 2002; Okada, 2005), self-licensing effects are now also established in the domain of eating behavior. For example, in two empirical studies it was found that when participants thought that they had invested more effort in a task (De Witt Huberts et al., 2012) or were primed to justify discrepant behavior (Taylor et al., 2013, Study 3), they ate more of an unhealthy snack in a subsequent “taste-test” compared to participants in the control condition. An increase in unhealthy food choices was also found when participants recalled a personal achievement compared to the control conditions in which participants recalled either a typical day or an experience that made them happy (thereby ruling out the effect of positive affect; Wilcox, Kramer, & Sen, 2011). These studies aptly illustrate the immediate negative effects of self-licensing on self-regulation of eating behavior, as well as the diversity in types of licenses that are employed to justify indulgence. Notwithstanding the contribution of these studies to establishing self-licensing effects in the domain of eating behavior, they have mainly focused on single decisions (about what to eat or how much to eat). It remains unclear what happens afterwards, when subsequent self-regulation dilemmas are encountered and sequential decision making takes place.

Few studies have looked beyond the immediate effects of self-licensing on eating behavior. Effron, Monin, and Miller (2013) looked at self-reported diet adherence and intentions to pursue weight loss goals. In this study, dieters who reflected on foregone indulgence (which served as a license) reported less adherence to their diet and weaker intentions to stick to their diet over the course of one week than dieters in the control condition. In a longitudinal study by Taylor et al. (2013, Study 2), participants’ intentions to halve their consumption of a

self-nominated snack for one month were assessed at baseline, together with self-reported consumption of this snack over the past week. In addition, participants were given a list of different licenses to indulge, and asked to report how often they used each license. At follow-up four weeks later, participants again reported their intake over the past week. The results showed that greater reported self-licensing was associated with greater consumption of the self-nominated unhealthy snack, but only for participants who had strong intentions to cut down on this respective snack. This supports the notion that licenses are mainly employed when a long-term goal is threatened (e.g. Taylor et al., 2013; De Witt Huberts et al., 2014a).

Further insight into more long-term outcomes of self-licensing comes from research on compensatory health beliefs (CHBs). CHBs are beliefs that the negative effects of an unhealthy behavior can be compensated for or “neutralised” by engaging in healthy behavior (Knäuper, Rabiau, Cohen, & Patriciu, 2004; Rabiau, Knäuper, & Miquelon, 2006) and as such constitute a category of licenses for goal disengagement. In a seven-day experience sampling study it was found that holding CHBs and the momentary formation of compensatory intentions were predictive of self-reported caloric intake (Kronick, Auerbach, Stich, & Knäuper, 2011). Furthermore, a prospective study demonstrated that holding diet-specific CHBs was related to lower adherence to self-set dieting rules at two-months follow up, which in turn predicted lower goal attainment in terms of weight loss (Miquelon, Knäuper, & Vallerand, 2012).

Taken together, these studies suggest that self-licensing prohibits successful self-regulation of eating behavior in the long run. However, they do not provide any insight into how self-licensing affects subsequent engagement in self-regulation, when a first dilemma is resolved (choosing French fries over a side salad because “you worked so hard today”) and a second dilemma presents itself (having chocolate pudding for dessert or not). This is a pivotal question to further our understanding of self-licensing, as it remains unknown how self-licensing effects unfold over time. A first step towards unraveling this is examining how self-licensing affects sequential decision making.

Self-Licensing and Goal Re-Engagement

Although both immediate (De Witt Huberts et al., 2012; Taylor et al., 2013, Study 3; Wilcox et al., 2011) and long-term outcomes of self-licensing (Effron et al., 2013; Taylor et al., 2013, Study 2) show that justifying indulgence leads to unhealthy eating behavior, there are theoretical grounds to suggest that self-licensing may promote goal re-engagement after initial self-regulation failure. To provide an example of this re-engaging effect, without a license the Abstinence Violation Effect (AVE; Marlatt & Gordon, 1980) is likely to occur, which follows from self-blaming attributions after a lapse from abstinence or self-control. This in turn leads to heightened negative affect that promotes escalation of the

problematic behavior. In eating behavior literature a similar phenomenon has been documented as the “what the hell effect”, when dieters decide it does not matter what they consume that day anymore once they have broken their diet (Herman & Mack, 1975; see also Muraven, Collins, Morsheimer, Shiffman, & Paty, 2005). However, effects like “what the hell” and AVE can be prevented when individuals engage in self-licensing, as it provides a reason to view the indulgence as an exception (e.g. I ate cake because it is my colleague’s birthday) rather than as a personal failure (e.g. I ate cake because I am weak-willed), thereby reducing the risk that dieters abandon their diet goal completely (and thus promoting goal re-engagement). This has been observed in a prospective study where obese dieters were grouped according to how they cognitively appraised diet violations before entering an extensive weight loss treatment program (Smith, O’Neil, & Rhodes, 1999). The group of dieters with a rationalisation tendency (i.e. retrospectively making excuses for dietary transgressions) scored higher on treatment completion than the group of dieters with a rigid, dichotomous, all-or-none thinking tendency (i.e. interpreting any violation as complete diet failure).

In contrast, there is also evidence suggesting that self-licensing may prevent goal re-engagement after initial self-regulation failure. For example, several studies show that negative feelings like guilt could actually promote goal re-engagement, by eliciting a desire to “launder” or “balance out” the respective indulgence by subsequently behaving responsibly and in line with long-term goals again, such as by having something healthy after consuming something tasty or indulgent (Rabiau et al., 2006; Ramanathan & Williams, 2007; Baumeister & Heatherton, 1996; Levav & McGraw 2009; Gilovich & Medvec, 1994; Tsiros & Mittal, 2000; Dhar & Simonson, 1999). Following this literature, self-licensing is not desirable in the sense that it prevents “goal promoting” feelings of guilt. In other words, when people do not feel guilty about an initial self-regulation failure (i.e. eating a cookie), because they can justify it by making situational attributions to this failure, they can more easily continue with the behavior (i.e. eating another cookie) as they do not experience adverse consequences in the form of negative affect. The fact that there was a reason for goal violation in the first place could even foster further goal-inconsistent behavior as this reason could also apply to subsequent decisions (i.e. “I can have a second cookie, after all it is my birthday”).

Evidently, the self-regulatory function of (diminished) negative affect after goal violation remains unclear, thus rendering the conclusion that self-licensing and its affective consequences harms subsequent goal re-engagement premature. Surprisingly, while anticipated negative affect has received attention in self-licensing literature as a potential underlying mechanism (e.g. De Witt Huberts et al., 2014a), studies that look at the affective consequences of self-licensing are limited to examinations of expected negative affect resulting from (un)justified decisions (e.g. Connolly & Zeelenberg, 2002) and retrospective

estimations of experienced negative affect after indulgent choices with or without a reason (Xu & Schwarz, 2009). Therefore, the actual affective consequences of self-licensing are explicitly addressed in the present studies, to empirically verify that self-licensing leads to lower levels of negative affect after indulgence.

Self-Licensing and Self-Regulatory Ability

Another relatively unexplored way in which self-licensing may boost self-regulation is through the maintenance of motivation and feelings of self-efficacy for self-regulation. The importance of looking at self-efficacy is evidenced by studies demonstrating that diet goal violations are associated with diminished self-efficacy. This has been found in correlational studies (Grilo, Shiffmann, & Carter-Campbell, 1994) as well as ecological momentary assessment studies (Carels et al., 2001; Carels, Douglass, Cacciapaglia, & O'Brien, 2004; McKee, Ntoumanis, & Taylor, 2014). Low self-efficacy in turn has been found to predict binges in individuals with binge eating disorder (Carels et al., 2004) and high levels of self-efficacy have been linked to weight loss success (i.e. Glynn & Ruderman, 1986; Kitsantas, 2000; Elfhag & Rössner, 2005). Reliance on justification may enhance or preserve feelings of self-efficacy. That is, excuses can make the goal violation feel less like a failure as it can be interpreted as an exception and attributed to situational rather than personal attributions. A similar line of reasoning is employed in Marlatt and Gordon's (1985) relapse prevention model, where low self-efficacy is identified as an important risk factor for goal violations and AVE. They argued that situational attributions prevent the detrimental effects of goal violations on self-efficacy.

Related to self-efficacy is motivation, which constitutes another important indicator of self-regulatory ability (Baumeister & Vohs, 2007). Self-efficacy beliefs influence how well individuals motivate themselves and persevere in the face of difficulties (Bandura, 2012), and perceived control (i.e. self-efficacy) has been identified as crucial to the maintenance of motivation and the translation of intentions into action (Sheeran, 2002; Locke & Latham, 1990). The importance of maintaining motivation is also illustrated by the "what the hell effect" (Herman & Mack, 1975), when individuals' motivation to self-regulate drops when they perceive a (small) diet violation as their diet being ruined, and subsequently stop monitoring what they eat. In such cases, self-licensing may help to maintain motivation, either through preserving self-efficacy or directly by providing situational attributions.

In sum, self-licensing may attenuate the damaging effect of self-regulation failure on feelings of self-efficacy and motivation. Therefore, the perceptions of either improved or impaired self-regulation ability are examined in the present research, by looking at diet self-efficacy and diet motivation after indulging with or without a license.

THE PRESENT RESEARCH

The present studies were designed to complement the current literature by looking at how self-licensing processes affect how people respond to a subsequent self-regulation dilemma. A vignette study method was employed to present participants with a scenario in which they encountered a second self-regulation dilemma after having made an indulgent choice. Vignettes have been used previously to study variables in very specific and controlled settings (Koo & Fishbach, 2008, Studies 1–3; Graziano, Habashi, Sheese, & Tobin, 2007; Novemsky & Dhar, 2005; Zemack-Rugar, Corus, & Brinberg, 2012), such as the present studies that require a sequence of specific events to take place (responding with indulgence in a first dilemma, experiencing a second dilemma), under certain conditions (being on a diet) that are hard to simulate in a lab setting. Still, to control for potential limitations of this method, participants were explicitly asked about their capacity to imagine themselves in the described situation. Also, as participants were told that they were on a diet, two additional precautions were taken to make sure that participants could relate to this: we assessed how concerned participants are with their own eating behavior and only female participants were included in the studies, as women are in general more concerned about their body weight than are men (Grabe, Ward, & Hyde, 2008). With respect to the affective consequences of self-licensing, it was hypothesised that the availability (vs. absence) of a license for an indulgent choice results in decreased expected negative affect. With regard to the main variable of interest, likelihood of making a second indulgent choice, no specific hypothesis was formulated, as this likelihood can theoretically increase or decrease. This theory-driven exploration also applies to the assessment of diet motivation and diet self-efficacy, which are addressed in Study 2.

STUDY 1

Method

Participants. A total of 67 participants completed the vignette survey through Amazon's Mechanical Turk (MTurk). Fifteen of these participants were excluded from the analyses because they had either participated in a similar vignette study before ($n = 5$);¹ were male ($n = 6$);² or were unable to sufficiently imagine themselves in the situation described ($n = 4$; see Measures). This

¹ MTurk does not provide an option to exclude workers based on assignments (e.g. surveys) they have done before. Therefore, it was only possible to check this afterwards.

² MTurk does not provide the option to only allow females to participate. Although the description stated that only females could participate, a number of male participants completed the survey.

resulted in a final sample of 52 female participants, with a mean age of 31.08 ($SD = 9.11$) and a mean BMI of 25.75 ($SD = 7.76$).

Design and Procedure. The present study employed an independent groups one-factor design, with self-reported likelihood of making a second indulgent choice as main dependent variable. Participants were recruited through MTurk, an open online marketplace which can be used for web-based data-collection (Buhrmeister, Kwang, & Gosling, 2011). MTurk “workers” were invited to participate in a short survey about how women respond to specific situations, in return for \$0.25. Workers who agreed to participate were redirected to an online survey, where they were randomly assigned to the license ($n = 25$) or control (no license) condition ($n = 27$). After participants gave informed consent, the study started with an assessment of demographics and eating concerns. Participants then received detailed instructions, emphasising the importance of trying to really imagine themselves in the situation described. This was followed by the vignette itself, describing how the protagonist wants to lose weight to fit into a dress for a friend’s upcoming wedding, but decides to buy a piece of chocolate pie at the local bakery. In the license condition, this decision was preceded by a license, i.e. an excuse to justify the indulgent choice (see Manipulation). In the control condition, no license was provided. Next, participants were asked how justified they found this choice (manipulation check) and how guilty they expected to feel about this choice (affective consequence). Then a subsequent self-regulation dilemma was presented: While waiting in line to pay for the chocolate pie, the participant sees another tempting treat (i.e. sausage croissant rolls). Participants were asked to report how likely they were to also buy the sausage croissant rolls, which served as the main outcome measure. Subsequently, control questions were administered to assess whether participants could sufficiently imagine themselves in this kind of situation. Lastly, participants provided their height and weight. After completing the survey, participants were thanked and provided with a code to receive \$0.25 on their MTurk worker account.

License Manipulation. The license provided in the experimental condition was that this was the only opportunity to buy a piece of the chocolate pie, as it was only sold on that day to celebrate the bakery’s 10-year anniversary. This was expected to be an appealing justification as it frames the situation as being “a special occasion”, as well as a one-time opportunity, both allowing the protagonist to indulge “just this once” (Taylor et al., 2013; see also Verhoeven, Adriane, De Vet, Fennis, & de Ridder, 2014). To strengthen the liveliness of the vignette and to reinforce the justifiableness of the indulgent choice, participants were told that they said to themselves to just enjoy the pie before they take up their diet tomorrow. This future intention to restrict food intake can also serve as a license to indulge in soon-to-be-forbidden foods (Urbszat, Herman, & Polivy, 2002; Knäuper et al., 2004).

Measures. All answers (demographics excluded) were given on a visual analogue (VAS) scale ranging from 0 (*not at all*) to 100 (*very much*).

Demographics: Participants were asked to report their gender,² age, profession, work hours per week, and household composition.³

Eating concerns: Three items assessed eating concerns: “Do you watch your weight?”, “Do you watch what you eat in order to lose weight or to not gain weight?”, and “Do you watch what you eat for your general health?” A mean score was computed ($\alpha = .84$), which served as a potential control variable.

Justifiableness: One item was administered to assess how justified participants perceived the decision to indulge, which served as a manipulation check: “How justified do you find your choice to buy the piece of chocolate pie?”

Expected negative affect: Guilt: To assess the affective consequences, one item was administered to see how guilty participants expected to feel about the decision to indulge: “How guilty do you feel about your choice to buy the piece of chocolate pie?”

Likelihood of second indulgent choice: As an index of how having made an indulgent choice with a license affects a second self-regulation dilemma, participants were asked. “How likely is it that you will buy a piece of chocolate pie and the sausage croissant rolls?”

Control variables: Three items were administered to control for participants’ capacity to imagine themselves in the situation described: “How well were you able to imagine yourself in the situation?”, “How well were you able to reflect on your feelings and thoughts?”, and “To what degree is this a situation that you could actually experience?” Participants who scored lower than 70 on all three control variables were removed from further analyses.

Body Mass Index (BMI): Participants’ BMI was calculated using their reported weight and height. BMI served as a potential control variable.

Results

Randomisation Check. An ANOVA was performed with condition (License: yes vs. no) as independent variable and age, BMI, eating concerns, and the control variables as dependent variables, indicating successful randomisation (all $ps > .11$).

Manipulation Check. An ANOVA with condition (License: yes vs. no) as independent variable and perceived justifiableness as dependent variable revealed that participants in the license condition perceived the indulgent choice

³ Profession, work hours per week, and household composition were assessed to check for sufficient diversity within the sample. As this was the case, these are not further reported on in the results. The interested reader is referred to the corresponding author.

as more justified ($M = 63.72$, $SD = 26.11$) than participants in the control condition ($M = 30.89$, $SD = 31.83$), $F(1, 50) = 16.38$, $p < .001$, $\eta^2 = .25$.

Affective Consequences. Correlations: Pearson correlation coefficients were computed to assess potential associations between the dependent variable feelings of guilt and age, BMI, and eating concerns. A significant association was found between feelings of guilt and eating concerns ($r = .28$, $p = .047$).

Main analysis: An ANCOVA with condition (License: yes vs. no) as independent variable, eating concerns as a covariate, and feelings of guilt as dependent variable revealed that participants in the license condition expected to feel less guilty about the choice to indulge ($M = 56.56$, $SD = 32.42$) than participants in the control condition ($M = 76.30$, $SD = 24.12$), $F(2, 49) = 7.20$, $p = .010$, partial $\eta^2 = .13$.

Likelihood of Second Indulgent Choice. Correlations: Pearson correlation coefficients were computed to assess potential associations between the dependent variable (i.e. likelihood of second indulgent choice) and age, BMI, and eating concerns. No significant associations were found (all $ps > .47$).

Main analysis: An ANOVA was performed with condition (License: yes vs. no) as independent variable and the self-reported likelihood of a second indulgent choice (i.e. also buying the croissant sausage rolls) as dependent variable. Participants in the experimental condition reported being more likely to make a second indulgent choice ($M = 46.68$, $SD = 34.61$) compared to participants in the control condition ($M = 27.41$, $SD = 29.68$), $F(1, 50) = 4.67$, $p = .036$, $\eta^2 = .09$.

Discussion

As expected, when participants were provided with a license, they perceived the decision to buy a piece of chocolate pie as more justified and they also expected to feel less guilty about this indulgent decision compared to participants without a license. More importantly, the results show that participants who received a license were subsequently more likely to indulge again, by also buying another treat. This finding suggests that having a license for a first indulgent choice negatively affects people's ability to effectively deal with a second self-regulation dilemma. However, a limitation of the current vignette is that it presents this second dilemma in the same situation (i.e. the bakery) with only minimal time between the two decisions, which may have induced the perception of making a simultaneous choice rather than a sequential choice. Therefore, in Study 2 the second dilemma is also presented in a new situation (i.e. grocery store), thereby adding a second factor to the design. Furthermore, as the license in Study 1 was actually two-fold, of which one is generalisable to indulge in other unhealthy foods as well (i.e. "I will pick up my diet tomorrow"), only the license that exclusively applies to the first dilemma (i.e. "the chocolate pie is only available

today”) was presented. In that way, it is possible to disentangle the effects of having a general license versus an exclusive license. In addition, a more elaborate examination of the affective consequences was performed by also looking at expected feelings of regret and shame in addition to feelings of guilt. These have been identified as negative emotions that can arise in response to indulgent choices (Ramanathan & Williams, 2007). Also, in addition to self-reported likelihood of making a second indulgent choice, participants’ self-reported diet motivation and diet self-efficacy was assessed as a proxy of their self-regulatory ability after indulging with or without a license.

STUDY 2

Method

Participants. A total of 180 participants completed the vignette survey through MTurk. Eight participants were removed due to not being able to sufficiently imagine themselves in the situation described (see Measures, Study 1) and six participants because they did not read the vignette properly (reading time < 15 seconds).⁴ This resulted in a final sample of 166 female participants, with a mean age of 36.55 ($SD = 12.20$) and a mean BMI of 29.19 ($SD = 7.47$).

Design and Procedure. The present study employed a 2 (License: yes vs. no) \times 2 (Situation second dilemma: same vs. new) between-subjects factorial design, with self-reported likelihood of making a second indulgent choice as main dependent variable. A similar procedure as in Study 1 was employed: MTurk workers were invited to participate in a short survey in return for \$0.25. Workers who agreed to participate were redirected to an online survey, where they were randomly assigned to one of the four conditions (License: yes, Situation: same, $n = 41$; License: yes, Situation: new, $n = 43$; License: no, Situation: same, $n = 38$, License: no, Situation: new, $n = 44$). After participants gave informed consent, the survey started with an assessment of demographics and eating concerns. This was followed by the vignette itself, in which the presence or absence of a license to buy a piece of chocolate pie was manipulated. Next, justifiableness was assessed as a manipulation check and participants were

⁴ Based on advanced experience with using MTurk, participants’ vignette reading time was measured (in a way that was invisible to participants) to exclude outliers that indicated insufficient adherence to the instruction to read the vignette carefully. The cut-off point of 15 seconds was based on the distribution of reading times per condition. In the first condition three outliers were identified (4.22, 7.04 and 10.76 seconds). For each of the remaining conditions, we decided to exclude the lowest reading time, as in both conditions 2 and 4 the lowest reading times were not even 3 seconds (2.94 and 2.29, respectively). To be consistent, we then also excluded the lowest reading time in condition 3, which was 14.44 seconds. This resulted in the cut-off point of 15 seconds.

asked to report how much guilt, shame, and regret they expected to feel in relation to the indulgent choice. Then two different subsequent self-regulation dilemmas were presented. In the first scenario, as a replication of Study 1, participants were asked to report how likely they were to also buy the sausage croissant rolls that they spotted while waiting in line at the bakery (i.e. same situation). In the second scenario, participants were told that after buying the piece of chocolate pie they went on to the grocery store (i.e. new situation) where there was a plate full of one-bite croissant sausage rolls for customers to taste. Participants who read this scenario were subsequently asked to report how likely they were to try the free-sample sausage croissant rolls. Thus, importantly, participants had bought but not consumed the chocolate pie, meaning that just purchasing chocolate pie made for an indulgent choice. Then, participants' perceived self-regulatory ability (diet motivation and self-efficacy) was measured. Subsequently, control questions were administered to assess whether participants could sufficiently imagine themselves in this kind of situation. Lastly, participants provided their height and weight. After completing the survey, participants were thanked and provided with a code to receive \$0.25 on their MTurk worker account.

License Manipulation. The licence provided for the piece of chocolate pie was similar to the license used in Study 1, except that the license was now only about the chocolate pie being "a special occasion" and a one-time opportunity, and not about "picking up one's diet tomorrow".

Measures. Similar measures were used as in Study 1. Additional measures are reported below. All answers were given on a visual analogue (VAS) scale ranging from 0 (*not at all*) to 100 (*very much*).

Expected negative affect: Regret and shame: To assess the affective consequences of self-licensing, in addition to guilt, one item was administered to assess how much participants expected to regret the decision to indulge: "How much do you regret your choice to buy the piece of chocolate pie?" Another item was administered to assess how ashamed participants expected to feel about the decision to indulge: "How ashamed do you feel about your choice to buy the piece of chocolate pie?"

Likelihood of second indulgent choice: As an index of how having made an indulgent choice with a license affects a second self-regulation dilemma, participants were asked, "How likely is it that you will buy the croissant sausage rolls?" in the first scenario (i.e. same situation) or, "How likely is it that you have a taste of the croissant sausage rolls?" in the second scenario (i.e. new situation).⁵

⁵ To deal with the great number of (extreme) outliers on the dependent variable "likelihood of second indulgent choice", a square root transformation was performed on this variable, thereby reducing the number of outliers to 1. For clarity, the untransformed means and standard deviations are reported, with the exception of the graphical display in Figure 1.

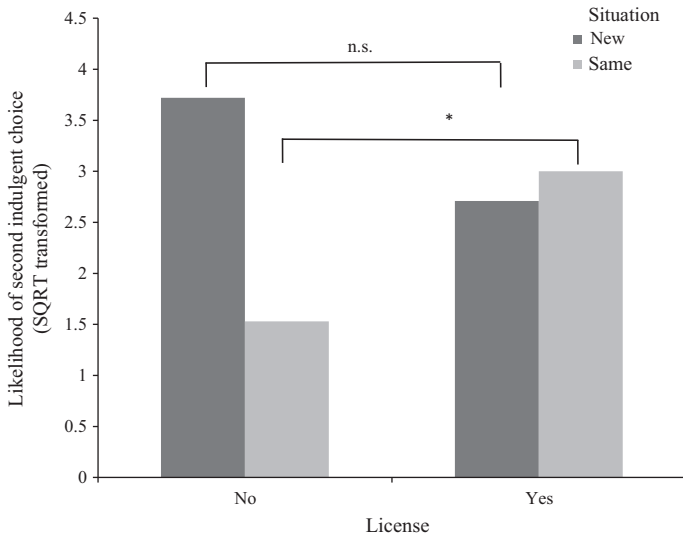


FIGURE 1. Interaction effect between License (yes vs. no) and Situation (new vs. same) in affecting the likelihood of a second indulgent choice.

Perceived self-regulatory ability: Participants' motivation and feelings of self-efficacy with respect to their weight loss goal were measured as an index of perceived self-regulatory ability. Eighteen items assessed how the participants felt after indulging in the chocolate pie, when they started to think about their goal to lose some weight again. A principal component analysis (PCA) was performed to verify whether the factors motivation and self-efficacy could be extracted from these 18 items. The suitability of PCA was assessed prior to analysis. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.4. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.88 with individual KMO measures all greater than 0.8, "meritorious" classifications according to Kaiser (1974). Bartlett's test of sphericity was statistically significant ($p < .001$), indicating that the data were fit for PCA. PCA with oblique rotation revealed four components that had eigenvalues greater than one and which explained 36.35 per cent, 24.37 per cent, 7.66 per cent, and 6.03 per cent of the total variance, respectively. Visual inspection of the scree plot indicated that two components should be retained (Cattell, 1966). In addition, a two-component solution met the interpretability criterion. As such, two components were retained. The two-component solution explained 60.72 per cent of the total variance. The interpretation of the data was consistent with the indices of self-regulatory ability the items were designed to measure with strong loadings of self-efficacy items on Component 1 (all loadings $> .51$), and motivation items on Component 2 (all loadings $> .70$).

Mean scores were computed for each factor, and the Pearson correlation coefficient obtained revealed that the factors were uncorrelated, $r = .09$, $p = .27$. Eleven items assessed self-efficacy ($\alpha = .91$) and example items are: "To what degree do you feel in control over your eating behavior?" and "How hard will it be to reach your goal weight before the wedding?" (reversed item). Seven items assessed motivation ($\alpha = .89$) and example items are, "How motivated are you to reach your goal weight?" and "To what degree do you make losing weight your top priority?"

Results

Randomisation Check. An ANOVA was performed with condition as independent variable and age, BMI, eating concerns, and the control variables as dependent variables, indicating successful randomisation (all $ps > .37$).

Manipulation Check. An ANOVA with the factor License (yes vs. no) as independent variable and perceived justifiableness as dependent variable revealed that participants in the license condition perceived the indulgent choice as more justified ($M = 44.83$, $SD = 32.89$) than participants in the control condition ($M = 20.48$, $SD = 23.05$), $F(1, 164) = 30.40$, $p < .001$, $\eta^2 = .16$.

Affective Consequences. Correlations: Pearson correlation coefficients were computed to assess potential associations between the dependent variables (feelings of guilt, shame, and regret) and age, BMI, and eating concerns. A significant association was found between feelings of guilt and eating concerns ($r = .20$, $p = .01$) and between feelings of regret and eating concerns ($r = .28$, $p < .001$). A marginally significant association was found between feelings of shame and BMI ($r = .15$, $p = .061$).

Main analyses: A MANOVA was performed with the factor License (yes vs. no) as independent variable and guilt, shame, and regret as dependent variables. There was a significant multivariate effect, $F(3, 162) = 6.41$, $p < .001$, partial $\eta^2 = .11$. At the univariate level this effect was significant for all dependent variables (including the respective covariates): Participants in the license condition expected to feel less guilty about the choice to indulge ($M = 65.70$, $SD = 34.60$) than participants in the control condition ($M = 80.26$, $SD = 25.07$), $F(2, 163) = 8.52$, $p = .004$, partial $\eta^2 = .05$. In addition, participants in the license condition expected to feel less regret about the choice to indulge ($M = 58.96$, $SD = 35.58$) than participants in the control condition ($M = 79.85$, $SD = 25.77$), $F(2, 163) = 17.19$, $p < .001$, partial $\eta^2 = .10$. Also, participants in the license condition expected to feel less shame about the choice to indulge ($M = 47.01$, $SD = 37.51$) than participants in the control condition ($M = 63.30$, $SD = 33.60$), $F(1, 164) = 8.68$, $p = .004$, $\eta^2 = .05$. Including the

marginally significant covariate resulted in a similar outcome, $F(2, 163) = 9.70$, $p = .002$, partial $\eta^2 = .06$.

Likelihood of Second Indulgent Choice. *Correlations:* Pearson correlation coefficients were computed to assess potential associations between the dependent variable “likelihood of second indulgent choice” and age, BMI, and eating concerns. No significant associations were found (all $ps > .09$).

Main analysis: A 2×2 factorial ANOVA was performed with License and Situation as independent variables and the self-reported likelihood of a second indulgent choice as dependent variable. A marginally significant main effect of Situation was found, $F(3, 162) = 3.78$, $p = .054$, partial $\eta^2 = .02$. Participants who read about a second dilemma in a new situation were more likely to indulge again ($M = 22.97$, $SD = 34.30$) than participants who read about a second dilemma in the same situation ($M = 12.52$, $SD = 21.99$). There was no significant main effect of License, $F(3, 162) = .22$, $p = .64$, but a significant interaction was found between License and Situation in affecting the likelihood of a second indulgent choice, $F(3, 162) = 6.42$, $p = .012$, partial $\eta^2 = .04$. Simple effects analyses revealed that when participants were presented with the second dilemma in the same situation, they were more likely to indulge when a license was available ($M = 17.72$, $SD = 26.23$) compared to when a license was not available ($M = 6.92$, $SD = 14.62$), $p = .040$. When participants were presented with the second dilemma in a new situation, there was no difference in the likelihood of indulging depending on the availability of a license, $p = .14$ (see Figure 1). Simple effects analyses also showed that when participants were provided with a license no difference was found between the same and the new situation, $p = .68$. When participants were not provided with a license, participants were more likely to indulge in a new situation ($M = 26.73$, $SD = 35.11$) than in the same situation ($M = 6.92$, $SD = 14.62$), $p = .002$.

Perceived Self-Regulatory Ability. *Correlations:* Pearson correlation coefficients were computed to assess potential associations between age, BMI, and eating concerns and the dependent variables motivation and self-efficacy. Self-efficacy was associated with age, $r = -.16$, $p = .039$, and BMI, $r = -.21$, $p = .007$. Motivation was associated with eating concerns, $r = .29$, $p < .001$. These variables were included as control variables in the following analyses.

Main analysis motivation: A 2×2 factorial ANOVA was performed with License and Situation as independent variables, eating concerns as control variable, and motivation as dependent variable. No significant main effects or interaction effect were found, all $ps > .20$.

Main analysis self-efficacy: A 2×2 factorial ANOVA was performed with License and Situation as independent variables, age and BMI as control variables, and self-efficacy as dependent variable. No significant main effect of Situation or interaction effect between License and Situation in affecting self-

efficacy were found, both $ps > .41$. A marginally significant main effect of License was found, $F(5, 158) = 3.80$, $p = .053$, partial $\eta^2 = .02$. Participants who were presented with a license to indulge reported higher levels of self-efficacy ($M = 49.05$, $SD = 20.03$) than participants who were not presented with a license to indulge ($M = 43.94$, $SD = 19.60$).

Discussion

The findings of Study 1 were replicated: when participants encountered the second dilemma in the same situation, they were more likely to opt for indulgence when a license was available as opposed to unavailable. In a new situation, however, the likelihood of indulging again was unaffected by the availability of a license. Diet motivation was not affected by the license or the situation in which the second dilemma was presented, but some indication was found that diet self-efficacy was better maintained when the indulgence was preceded by a license independent of the situation. With respect to the affective consequences, in addition to lower feelings of guilt, as was also found in the first study, having a license for indulgence also appeared to result in diminished expected feelings of shame and regret.

GENERAL DISCUSSION

The present studies examined the effects of self-licensing in a subsequent self-regulation dilemma. The affective consequences, the likelihood of making a second indulgent choice, and perceived self-regulatory ability were assessed to provide insight into whether self-licensing undermines or supports goal re-engagement after an initial indulgent choice. First, it was confirmed that the availability (vs. absence) of a licence for an indulgent choice results in less expected feelings of guilt (Studies 1 and 2), as well as less shame and regret (Study 2). Second, in both studies it was found that having made an indulgent choice with a license (vs. without a license) makes it more likely that a second opportunity to indulge is opted for as well when this opportunity is presented in the same situation. In a new situation, the (un)availability of a license did not affect how participants responded to a subsequent self-regulation dilemma. Third, there was a trend for participants who received a license for the first indulgent choice to report higher levels of self-efficacy, whereas motivation remained unaffected by license availability.

The current findings on the affective consequences complement earlier studies by showing that having a license not only reduces anticipated feelings of guilt before indulgence (Khan & Dhar, 2006, Study 3; Kivetz & Zheng, 2006), but also results in less expected experience of guilt, shame, and regret after having made an indulgent choice. This is also in line with predictions that follow from AVE (Marlatt & Gordon, 1980). Moreover, it was verified that a license indeed

results in higher perceived justifiableness of the indulgence. Hitherto, no studies have explicitly assessed this, as it is mostly inferred from behavioral outcome measures (e.g. De Witt Huberts et al., 2012; Taylor et al., 2013; Wilcox et al., 2011).

More importantly, the current studies are the first to provide evidence regarding the role of self-licensing in dealing with subsequent self-regulation dilemmas, thereby adding to studies focusing on immediate effects (De Witt Huberts et al., 2012; Wilcox et al., 2011) and longitudinal studies (Effron et al., 2013; Taylor et al., 2013; Kronick et al., 2011; Miquelon et al., 2012). Based on the present findings, it seems that self-licensing negatively affects goal re-engagement in the same situation, but also has positive effects in terms of maintaining or increasing feelings of self-efficacy.

Looking at Study 1, the higher tendency to indulge again when a license was provided could have been the result of a highlighting process (Dhar & Simonson, 1999). That is, the given general license (i.e. "I will pick up my diet tomorrow") may have highlighted the goal to indulge in soon-to-be-forbidden foods, which then guided the subsequent choice. Without this goal provided by the license, chances are higher that the two subsequent decisions are viewed separately, which has been found to promote a balancing strategy (i.e. employing a compensatory approach; Dhar & Simonson, 1999). Yet the exclusive license in Study 2 (i.e. "the chocolate pie is only available today") also leads to a higher likelihood of buying another treat. Hence, a more plausible explanation is that as both treats were purchased simultaneously, the threshold to add another treat to this purchase was lower than when the second treat was presented on a separate occasion, which more explicitly separates the subsequent decisions into two consecutive events. Thus, additional research is needed to further examine this interplay between self-licensing and situational factors in affecting goal re-engagement.

An interesting finding was that participants without a license were more likely to indulge again when the dilemma was presented in the new situation. It could be argued that the unhealthy treats were offered as free samples to taste and were presented in a different quantity (i.e. one-bite size), thereby functioning as additional (new) licenses to indulge. However, it then remains questionable why this effect was not found for participants who were provided with a license. Another account for this finding is that it illustrates self-licensing preventing the "what the hell effect" (Herman & Mack, 1975; see also Muraven et al., 2005). Participants without a license might have decided that it did not matter what they consumed anymore once they had broken their diet, as they had already experienced negative affect. Obviously, these is a potential underlying mechanism that warrants further research to be empirically verified. With the current vignette design, it was not feasible to test whether the negative affective consequences mediated between the (un)availability of a license and the likelihood of making a second indulgent choice. Testing this mediation model is a recommended route for future studies.

The finding that self-efficacy was maintained or even increased when a license for indulgence was provided gives valuable insight into the potential adaptive qualities of self-licensing. It reveals a way in which self-licensing may be an adaptive self-regulation strategy, as is also postulated by Marlatt and Gordon's relapse prevention model (1985). Surprisingly, whereas it was expected that diet self-efficacy and motivation would be related factors, no association was found between these two indices of self-regulatory ability. Also, diet motivation appeared to be unaffected by license availability. This could be an artifact of our procedure, in which participants were provided with a specific motivation to diet (i.e. losing weight to fit into a dress for an upcoming wedding), perhaps keeping motivation high in spite of failure. In contrast to motivation, diet self-efficacy was not referred to in the vignette and hence left more room for participants' own projection, potentially explaining the absence of an association between the two.

Further research is needed to deal with limitations of the present studies. First and foremost are the limitations of using a vignette design, that relies on self-report and the imaginative abilities of participants. This may account for the small to medium effect size that was found for the likelihood of making a second indulgent choice in Study 2, although the effect was of a medium to large magnitude in Study 1. In addition, it could be argued that strictly speaking the cross-sectional design employed does not allow for interpreting the effects in terms of "subsequent". Also, the present studies focused on the effects of making an indulgent choice with or without a license, and not on what happens after actual indulgence, i.e. eating the chocolate pie. Hence, replication studies that manipulate actual indulgence through self-licensing and include behavioral outcome measures would greatly strengthen the current findings. Nonetheless, the obvious shortcomings of using vignettes are to some extent offset by the controlled sequence of events that they can present, as well as the conditions that necessitate justifying indulgence (i.e. being on a diet). The scenarios described were carefully formulated and closely resembled real-life situations, and precautions were taken to minimise the impact of potential insufficient imaginative capabilities of participants. Importantly, the mere value of using vignettes in the present study—despite its obvious limitations—was to set the stage for research on self-licensing in sequential decision making, rather than studying it as a single behavior in a vacuum.

Another issue that should be addressed is the BMI of the participants in the current studies. Whereas the first study consisted of participants that were borderline slightly overweight (i.e. BMI > 25), for the second study this was borderline moderate obesity (i.e. BMI > 30). On the one hand, this has implications for the generalisability of the present findings; on the other hand it could be argued that these samples are actually representative of the population of interest. That is, the practical implications of extending our understanding of this route to self-regulation failure primarily converge in new avenues for the development of

effective strategies for dealing with the rising numbers of people with overweight and obesity (Taylor et al., 2014).

As yet it remains unclear whether interventions should focus on strategies that either support or counteract self-licensing processes. The present set of studies provides preliminary evidence suggesting that self-licensing is unfavorable when dilemmas are encountered in one situation, while it seems to be adaptive in the sense that it may protect feelings of control over one's eating behavior after indulgence. On a related note, it seems reasonable to assume that complete self-control over one's eating behavior is not feasible and perhaps even undesirable. Many popular diets already acknowledge the need to eat freely every once in a while by incorporating "slacking-off" days into the diet regime, based on the underlying idea that this replenishes dieters' strength to follow their diet again. It could be that when the underlying motive of allowing oneself a treat is to serve the long-term goal ("I indulge a little every now and then to prevent losing complete control and overeating at some point"), self-licensing can be an adaptive self-regulation strategy. Also, a pivotal factor in identifying who benefits from self-licensing may be how diet violations are responded to, in terms of self-blame and self-efficacy. When diet violations are predominantly determined by negative affect and low self-efficacy, it could be helpful to justify dietary transgressions to some extent, thereby preventing further derailment. Hence, an important avenue for future research is to identify under what conditions self-licensing is a harmful or beneficial self-regulation strategy.

In conclusion, there is broad evidence for the detrimental effects of self-licensing on healthy eating behavior. The present studies align with these studies and show that having made one indulgent choice with a license (vs. without a license) makes a second indulgent choice more likely. Additional research on the aftermath of self-licensing is mandatory to further unravel in what ways self-licensing can hinder or support goal (re-)engagement.

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