

A study examining the relationship between emotional self-licensing, self-esteem and self-
affirmation

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Abstract

Introduction: Self-regulation failure can be explained by self-licensing which is coming up with reasons (i.e. justifications) that make the prospective goal-discrepant behaviour acceptable to oneself. In the present study it is assumed that self-esteem and self-affirmation are important in relation to self-licensing. The design of this study is an experimental between-participants design with one factor that is manipulated (self-licensing vs. control condition) It was hypothesized that self-licensing could affect self-affirmation, assuming that engaging in self-licensing leads to less self-affirmation; self-esteem could predict self-affirmation assuming that high self-esteem leads to less self-affirmation and self-licensing and self-esteem could interact in predicting self-affirmation, assuming that high self-esteem leads to weaker effects of self-licensing on self-affirmation than low self-esteem. Method: The study was conducted online, and 130 participants were randomly assigned to the control or self-licensing condition. In the self-licensing condition, a vignette was presented in which an individual used an emotion as a license to justify their goal discrepant behaviour; in the control condition this license was absent. Afterwards, the variables self-esteem, self-affirmation and restrained eating were measured. Results: Expectations were not confirmed. Results did show a relation between self-esteem and self-affirmation. The higher the self-esteem, the more self-affirmation participants used. Discussion: Findings are discussed in light of the limitations of the present study and recommendations are provided for future avenues.

KEYWORDS: self-licensing, self-esteem, self-affirmation, restrained eating

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“The woman answered the snake: “We may eat of the fruit of the trees in the garden. It is only about the fruit of the tree in the middle of the garden that God said, ‘You shall not eat it or even touch it, or else you will die.’ “But the snake said to the woman: “You certainly will not die! God knows well that when you eat of it your eyes will be opened and you will be like gods, who know good and evil.” The woman saw that the tree was good for food and pleasing to the eyes, and the tree was desirable for gaining wisdom. So, she took some of its fruit and ate it; and she also gave some to her husband, who was with her, and he ate it. Then the eyes of both of them were opened, and they knew that they were naked; so, they sewed fig leaves together and made loincloths for themselves. When they heard the sound of the LORD God walking about in the garden at the breezy time of the day, the man and his wife hid themselves from the LORD God among the trees of the garden. The LORD God then called to the man and asked him: Where are you? He answered, “I heard you in the garden; but I was afraid, because I was naked, so I hid.” Then God asked: Who told you that you were naked? Have you eaten from the tree of which I had forbidden you to eat? The man replied, “The woman whom you put here with me, she gave me fruit from the tree, so I ate it.” The LORD God then asked the woman: What is this you have done? The woman answered, “The snake tricked me, so I ate it.” (Genesis 3:2-12).

According to the Bible this is the story of the first human beings in a self-regulatory dilemma. A self-regulatory dilemma represents an internal conflict between different behavioural plans, one of which is of greater long-term importance than the other (Fishbach & Shah, 2006). For example, the first human beings have the long-term behavioural plan to not eat from the tree in the middle of the garden, but they are tempted to eat the fruits. This causes an internal conflict. The voices of temptation could be called self-licenses. Self-licensing can be defined as coming up with reasons (i.e. justifications) that make the prospective goal-discrepant behaviour acceptable to oneself (Prinsen, Evers & de Ridder, 2019). The self-license of the first human beings is that they tell themselves that they will get wisdom. But why do human beings use self-licensing? Little is known about the reason why. In this study it is argued that self-esteem and self-affirmation play an important role in self-licensing. To understand the relation of these concepts, a more elaborate explanation of self-regulatory dilemmas is needed.

A self-regulatory dilemma begins with a goal. A goal is whatever an individual is striving to accomplish (Reeve, Ryan, Deci & Lang, 2008). The process of accomplishing a long-term goal is referred to as self-regulation (Reeve et al., 2008). To accomplish goals, individuals need to resist the temptations or short-term goals that interfere with their long-term goal. For example, someone has the long-term goal of performing more physical activity. But at the same time, the person is tired after a long day and is tempted to stay home. This can be called a self-regulatory dilemma. In a self-regulatory dilemma, individuals often fail to resist temptations.

Dual process models can be used to explain failures at self-regulatory dilemmas (Baumeister & Vohs, 2007; De Witt Huberts, Evers & De Ridder, 2014; Sherman, Gawronski, Gonsalkorale, Hugenberg, Allen & Groom, 2008). Dual process models share the postulation that self-regulation is determined by two fundamentally different processes that compete for control over behaviour (De Witt Huberts et al., 2014). These different processes have been described using a variety of terms such as impulsive versus reflective. When cognitive resources are limited, behaviour will be predominantly guided by the impulsive system which relies on automatic implicit references. When cognitive resources are available, the reflective system will take over, allowing rational choices and explicit intentions. Self-regulation failure is often explained as being overwhelmed by impulse (Baumeister & Vohs, 2007). As such, research has focused on the ability to control one's impulses (De Witt Huberts et al., 2014). However, when our reflective reasoning abilities have the upper hand, this does not necessarily lead to successful self-regulation. In fact, our reasoning can be motivated by our current desires and result in self-regulation failure. Our capacity to reason can be employed to justify indulgence, just as using a license to permit yourself a forbidden temptation. Thus, self-licensing is typically an example of self-regulation failure through reasoning.

Self-licensing, thus the coming up with reasons (i.e. justifications) that make the prospective goal-discrepant behaviour acceptable to oneself (Prinsen et al., 2019), is based on a finding that people are more likely to make a choice that can be justified easily (De Witt Huberts et al., 2014). The easiness of a choice to justify is depending on the availability of the reasons that people can come up with. For example, someone has the long-term goal to use one's car less, but at the same time, one does not feel like cycling. On top of that, it is raining at that moment. The rain makes it is easier for the person to justify the choice to take the car. People can use all sorts of self-licenses to justify their behaviour (De Witt Huberts et al., 2014). For example, "I have a difficult exam" or "I did get a good grade". Surprisingly little is known about using emotions as self-licenses.

Emotions are often referred to as a part of the impulsive system (De Witt Huberts et al., 2014). However, recent research suggests that acting out of emotional behaviour is not always impulsive. Sometimes we use these emotions as a justification to undermine our long-term goals. Findings of Evers (2019) showed that over 70% of the participants used emotional justifications to eat. Almost half of the participants indicated to personally use emotional justifications to eat once a week or more and about 40% once a month. Only 10% of participants indicated to never use emotional justification to eat. These findings suggest that people recognize using emotions as a justification and actually use emotional justification as well. This far, however, it has remained unclear why people use (emotional) justifications and why they need them. In the present work, it is assumed that two processes may be important in relation to self-licensing: self-esteem and self-affirmation.

Self-esteem refers to emotional responses that people experience as they contemplate and evaluate different things about themselves (Heatherton & Wyland, 2003). According to Heatherton and Wyland (2003) self-esteem

arises from how individuals perceive themselves to be viewed by others and out of positive experiences that individuals have about themselves. The more positive individuals perceive they are viewed by others and the more positive experiences individuals have with themselves, the higher their self-esteem (Heatherton & Wyland, 2003). Self-esteem is also related to individuals' goals, because according to Heatherton and Wyland (2003) self-esteem is developed from the successful outcomes of individuals' goals.

Therefore, failure in achieving this goal could threaten the self-esteem of an individual. Goal failure could thus lead to a negative experience about oneself. The more negative experiences people have about themselves, the lower one's self-esteem (Heatherton & Wyland, 2003). Negative experiences and low self-esteem are undesired effects of the failure to achieve a goal because high self-esteem is of great importance for various domains, including job and relationship satisfaction, positive affect, less risk of depression, less negative affect and (psychological) health (Orth, Robins & Widaman, 2012). To protect oneself of having negative experience and develop a low self-esteem, it can be reasoned that individuals use self-licenses to justify their goal-discrepant behaviour. Self-licenses ensure acceptance of the choice (Prinsen et al., 2019). Therefore, it is assumed that individuals who engage in self-licensing will not have to feel bad about themselves after performing goal-discrepant behaviour and have higher self-esteem than individuals who do not engage self-licensing.

Self-esteem is also importantly related to self-affirmation. Self-affirmations are protective adaptations that alter the meaning of the event in a way that shields people from the conclusion that they are bad people (Sherman, Cohen, Nelson, Nussbaum, Bunyan & Garcia, 2009). Self-affirmations are used when a threat towards the self is perceived (Sherman & Cohen, 2006; Schmeichel & Vohs, 2009). A threat could be a self-regulation failure that causes negative experiences and lower self-esteem. Individuals may alter the meaning of a self-regulation failure, because it shields them from the conclusion to be a bad person. Therefore, it has been suggested that self-affirmations stem from the motivation to remain seeing yourself as a good person (Schmeichel & Vohs, 2009).

Self-affirmations allow people to focus on domains of self-integrity unrelated to the threat. To illustrate: imagine someone who really wants to quit smoking. But the person is very stressed that day because of work issues. The person knows that smoking a cigarette will make himself more relaxed. The person cannot resist the temptation and reasons "I eat healthy every day and I am fitnessing 3 times a week, so that one cigarette is not that bad". Research showed that individuals with low self-esteem are more likely motivated to use self-affirmations or any other form of self-justification (Holland, Meertens & van Vugt, 2002). Therefore, it is assumed that individuals with high self-esteem do not need as much self-affirmations, because they already think well about themselves.

So, both self-licensing and self-affirmation are related to self-esteem. But the difference of these two processes is timing. Engaging in self-licensing helps protecting self-esteem before goal discrepant behaviour is performed to prevent a possible threat (Prinsen et al., 2019). Self-affirmation helps protecting self-esteem, after

goal discrepant behaviour is performed (Schmeichel & Vohs, 2009). Therefore, it is assumed that individuals who engage in self-licencing before their goal discrepant behaviour, do not need self-affirmations because they already protected their self-esteem. Individuals who do not engage in self-licensing need self-affirmations to protect their self-esteem anyway.

Current research

Current research investigates the relation between self-licensing and self-esteem on the need for self-affirmation in a self-regulatory eating dilemma. Therefore, people could only participate if they were restrained eaters. Restrained eating refers to the intentional and sustained restriction of caloric intake for the purpose of weight loss or weight maintenance (Evers, Dingemans, Junghans & Boevé, 2018). When periods of restraint are difficult to maintain, restrained eaters can come into a self-regulation dilemma and disinhibition may follow. Without a self-regulation dilemma, self-licensing does not need to be used. Therefore, on the Prolific platform participants were selected on restrained eating. On top of that it was verified with restrained eating questions as part of the study. Emotions will be used as a form of self-licensing. The study had an experimental between-participants design with one factor that was manipulated (self-licensing condition vs. control condition). A main effect of self-licensing on self-affirmation was expected, with participants in the self-licensing condition using less self-affirmation compared to participants in the control condition. It was also expected that self-esteem has an effect on self-affirmation, such that participants with lower self-esteem will use more self-affirmation than people with higher self-esteem. Lastly, it was expected that there is an interaction between self-licensing and self-esteem, with high self-esteem leading to weaker effects of self-licensing on self-affirmation than low self-esteem.

Method

Design

The study had an experimental between-participants design with one factor that was manipulated (self-licensing condition vs. control condition) and one factor that was measured as continuous variable (trait self-esteem). Participants were randomly assigned to the self-licensing condition ($n = 69$) vs. the control condition ($n = 61$). The main dependent variable was self-affirmation.

Participants

Based on a power analysis with a linear multiple regression with fixed model R² deviation from zero, with an effect size $d = .1$, $\alpha = .05$, a power of .8 and three predictors, the estimated power included 114 participants. A sample size of 130 participants was chosen in case some participants were not actual restrained eaters and were

recruited by a convenience sample: a select sample based on easy accessibility (Neuman, 2014). Of the 130 participants, 22 participants were excluded from the analyses, because these participants had mean scores below 4 on the restrained eating questions and therefore it was concluded that they were not actual restrained eaters. Finally, 108 participants remained for the analyses. Participants were between 18 and 70 years old ($M = 30.21$, $SD = 10.85$). Of the 108 participants, 34 were male and 74 were female. See Table 1 for the characteristics of these participants.

Table 1:

Characteristics participants

Mean Sex (SD)	Mean Age (SD)	Mean SES (SD)	Mean Restrained eating (SD)	Mean BMI (SD)
1.69 (.48)	30.21 (10.85)	5.59 (1.60)	5.50 (.93)	24.69 (6.90)

Procedure

The online experiment was constructed with the Qualtrics program. The experiment was placed on the prolific platform, which is a platform where people can participate in scientific studies. It took approximately 5 minutes to finish the experiment. All the questions were based on self-reports. When participants opened the link to the experiment, they electronically signed an informed consent. To conceal the actual purpose of the study, the informed consent stated that the research was performed for learning more about storytelling in eating-related contexts. Participants were asked to empathize with a person described in a story. After that a vignette followed about someone who wanted to lose some weight before the summer started. The person was watching tv and started craving for a bag of crisps. Participants were then randomly assigned to the emotional self-licensing condition or the control condition. In the self-licensing condition, the person in the story comes up with the license that it is corona time and is very lonely and sad. Therefore, the person feels that the bag of crisps is deserved and eats it entirely. In the control condition the person in the story has no license, but just eats the bag of crisps entirely. To be sure that the participant read the vignette carefully, the vignette was presented again on the next page and they were asked to answer a few questions about the vignette to be able to check the manipulation. After this the participants filled in self-esteem and self-affirmation questionnaires. To control for participants who were not attentive to the questionnaires, one item was embedded in the self-esteem questionnaire as attention check, see

below. Next, participants filled in a restrained eating questionnaire and reported on demographics. Finally, participants were debriefed and paid.

Materials

Manipulation Check. To check if the manipulation worked as intended, two questions were asked. The first question was *“To what extent did the character described in the story have a valid reason to eat crisps?”*¹ Participants could answer on a scale from 1 till 10. The second question was *“What was the reason for the character described in the story to eat the bag of crisps?”* Answer options were 1: “The character was sad about being isolated due to the coronavirus.”, 2: “The character had a good grade for an exam.” and 3: “The character had no specific reason.” For the self-licensing condition, the first option was the right answer. For the control condition the third option was the right answer.

Self-esteem. Self-esteem was measured with the Rosenberg self-esteem scale which consists of 10 items (Rosenberg, 1965). An example of an item is: *“On the whole, I am satisfied with myself.”* The answer options consisted of a 4-point likert scale (1 = strongly agree till 4 = strongly disagree). Items 1, 3, 4, 7 and 10 were reversed scored. The self-esteem scale had a cronbach's alpha of .90 The higher the score on the self-esteem scale, the higher the self-esteem.

Self-affirmation. The dependent variable self-affirmation was measured with the spontaneous self-affirmation measure (SSAM), which consists of 13 items (Harris, Griffin, Napper, Bond, Schüz, Stride & Brearley, 2019). An example item is: *“When I feel threatened or anxious by people or events, I find myself thinking about my strengths”*. The answer options consisted of a 7-point likert scale (1 = agree completely till 7 = disagree completely). All the items were reverse scored. The SSAS had a cronbach's alpha of .91. The higher the score on the SSAS, the higher the need to self-affirm. In this study, this scale was used to measure how much the participants needed to affirm themselves after performing goal-discrepant behaviour.

Restrained eating. To check if participants actually were restrained eaters, a questionnaire measuring restrained eating was administered (Prinsen et al., 2019). The questionnaire consisted of 3 items. An example item is: *“Do you watch your weight?”* Answer options consisted of a 4-point likert scale (1 = strongly agree till 4 = strongly disagree). The higher the score, the more restrained eaters' participants were. The questionnaire had a cronbach's alpha of .52. The reliability analysis showed that without the item *“Do you watch what you eat for your general health?”*, the reliability would be improved (alpha = .66) and therefore it was decided to remove this item. The remaining two items *“Do you watch your weight?”* and *“Do you watch what you eat in order to lose weight or to not gain weight?”*

¹ Crisps was accidentally formulated as chips.

were combined into a restrained eating scale ($r = .275, p < .01$)

Demographics. Demographics were asked. “*What is your sex?*” Answer options were male, female or other. The questions “*What is your age?*”, “*What is your weight?*” and “*What is your height?*” had an open answer box. These answers were used to compute Body Mass Index (BMI). Lastly Social Economic Status (SES) was asked by participants trying to imagine themselves on a ladder representing where they stand in society (Anderson, Kraus, Galinsky & Keltner, 2012). There was an answer scale from 1 till 10. The higher the number, the higher self-reported status.

Attention check. To control for participants who were not attentive to the questions of the questionnaire, one item was asked. The item was: “*Please select the button ‘Agree’ to show that you are paying attention to the questions.*”. The answer options consisted of a 4-point likert scale (1 = strongly agree till 4 = strongly disagree). The required answer was ‘agree’.

Statistical analysis

Results were analysed with the Statistical Program for Social Sciences (SPSS). Results were significant when alpha was 0.5 or lower. For all analyses there was checked for outliers and corresponding assumptions. Assumptions are only mentioned in the results when violated. To prevent analysis from multicollinearity as much as possible, variables were mean-centered. A randomization check and a manipulation check were performed with an independent samples t test and a chi square test. As age turned out to be not randomly assigned (see below), there was controlled for this in the hierarchical multiple regression analysis. The hierarchical multiple regression analysis was performed with age in step 1, self-licensing and self-esteem in step 2, and the interaction between self-licensing and self-esteem in step 3. The outcome variable was the need to self-affirm. Also, correlation tests between the different variables were performed.

Results

Randomization check

An independent samples t test was used to compare the scores of self-esteem, restrained eating, BMI, SES between the two conditions. A chi square test was performed for sex. No significant condition effects were found for all variables (p 's $> .50$) except for age, with people in the self-licensing group having a lower age ($M = 27.60, SD = 8.75$) than participants in the control group ($M = 32.96, SD = 12.14$), $t(106) = 2.66, p < .01$. Therefore, in the main analysis there will be controlled for age.

Manipulation check

To check if the manipulation worked as intended, two questions were asked. The first question “*To what*

extent did the character described in the story have a valid reason to eat crisps?" was analysed with an independent sample *t* test. It was found that participants in the self-licensing condition rated the validation of the reason to eat crisps higher ($M = 7.13$, $SD = .31$) than the participants in the control condition ($M = 4.09$, $SD = .34$); $t(106) = -6.59$, $p < .01$. The second question "*What was the reason for the character described in the story to eat the bag of crisps?"* was also analysed. Only 3 participants answered incorrectly. As these participants did not have any influence on the results, they were remained in the analyses. Thus, the manipulation was considered successful.

Main analysis

To analyse the influence of condition and self-esteem and its interaction on self-affirmation, a hierarchical multiple regression analysis (MRA) was employed as outlined above. Unstandardized (B) and standardized (β) regression coefficients and squared semi-partial correlations (sr^2) for each predictor on each step of the hierarchical MRA are reported in Table 2. Before interpreting the results of the MRA, a number of assumptions were tested, and checks were performed. Mahalanobis distance did exceed the critical χ^2 for $df = 4$ at ($\alpha = .001$) of 18.467, which indicates that multivariate outliers could be a concern. The predictors interaction and condition showed significant tolerances ($p < .05$) in the third step, which indicates that the assumption of multicollinearity was violated. Variables were already mean-centered; therefore, nothing could be done to prevent multicollinearity.

In the first step, age accounted for a significant 3.6% of the variance in self-affirmation, $F(1, 106) = 3.927$, $p = .05$. In step two, self-esteem and condition were added to the regression equation and accounted for an additional 15% of the variance in self-affirmation, $\Delta F(2, 104) = 9.58$, $p < .001$. In combination, the three predictor variables explained 18.6 % of the variance in self-affirmation, $F(3, 104) = 7.90$, $p < .01$. In the third step, the interaction of self-esteem and condition was added and accounted for an additional 1.7% of the variance in self-affirmation, a non-significant increment, $p = .14$. In total step 3 explained 20.3% of the variance in self-affirmation, $F(4, 103) = 6.540$, $p < .01$. As can be seen in Table 2, age was a significant predictor in the first regression model. The only significant predictor of self-affirmation in the second regression model was self-esteem. In the third regression model, there were no significant predictors.

Table 2

Unstandardized (B) and Standardized (β) Regression Coefficients and Squared Semi-Partial Correlations for Each Predictor Variable on Each Step of a Hierarchical Multiple Regression Predicting Everyday Compliance with the Law (N = 108)

Variable	B [95% CI]	β	sr^2
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Step 1			
Age	0.02 [0.00, 0.04]*	0.19	.04
Step 2			
Age	0.01 [-0.01, 0.30]	0.10	.01
Self-esteem	0.79 [0.43, 1.15]**	0.40	.15
Condition	0.02 [-0.40, 0.44]	0.01	.00
Step 3			
Age	0.01 [-0.01, 0.03]	0.11	.01
Self-esteem	0.50 [-0.03, 1.03]	0.25	.03
Condition	-1.33 [-3.19, 0.53]	-0.58	.02
Interaction	0.52 [-0.18, 1.22]	0.61	.02

Note. CI = confidence interval

* $p < .05$

** $p < .01$

Correlations

A correlation analysis was performed to analyse the cohesion between the different variables. The results of the correlation analysis are depicted in Table 3.

Table 3:

Correlation, means and standard deviations of the variables sex, age, SES, BMI, restricted eating, self-affirmation and self-esteem

	Age	SES	BMI	Restrained eating	Self-esteem	Self-affirmation
Age	-					
SES	.048	-				
BMI	.275**	.074	-			
Restrained eating	-.066	-.017	.045	-		

Self-esteem	.232**	.555**	-0.11	-.179	-	
Self-affirmation	.189	.258**	.012	.146	.420**	-
MD	30.21	5.59	24.69	2.50	4.67	2.59
(SD)	(10.85)	(1.60)	(6.90)	(0.93)	(1.15)	(.58)

* Correlation is significant at .05

** Correlation is significant at .01

Explanatory analysis

In the current study, age was not expected to be a predictor for self-affirmation. Therefore, this relation warrants further exploration. Because age and self-esteem are predictors for self-affirmation and age could be a predictor for self-esteem, it was analysed whether self-esteem could be a mediator between age and self-affirmation. Therefore, a mediation analysis was performed with PROCESS to check whether self-esteem was a mediator between age and self-affirmation, with self-affirmation as dependent variable, age as independent variable and self-esteem as a mediation variable. Results showed that age is a significant predictor for self-esteem, $b = .01$, $t(1, 106) = 2.46$, $p = .02$. Age predicted 5,4 % of the variance in self-esteem. There was a significant total effect from age on self-affirmation, $b = .02$, $p = .05$; and suggested a significant indirect effect from age, through self-esteem on self-affirmation, $b = .01$, BCa CI [0.002, .019]. Thus, there could be a relation between age, self-esteem and self-affirmation

Discussion

Self-regulation dilemmas are difficult, because individuals need to resist temptations that interfere with their long-term goals. In the past, self-regulation failure has been explained through the impulsive side of the dual-process model (Baumeister & Vohs, 2007). Recent research has been focusing on self-regulation failure explained through the reflective side of the dual process model (De Witt Huberts et al., 2014). An example of self-regulation failure through the reflective side is self-licensing. Self-licensing is coming up with reasons (i.e., justifications) that make the prospective goal-discrepant behaviour acceptable to oneself (Prinsen et al., 2019). As relatively little is known about the reasons why individuals use self-licensing, the current study aimed to fill this gap.

It was expected that two processes were involved, namely self-esteem and self-affirmation. Individuals could use self-licenses to not feel bad about themselves (Prinsen et al., 2019). When self-licensing is not used and there is a failure in self-regulation, self-affirmations could help to protect the self-esteem anyway. Self-affirmations

alter the meaning of a self-regulation failure, because it shields individuals from the conclusion to be a bad person (Sherman et al., 2009). Therefore, a main effect of self-licensing on self-affirmation was expected, with participants in the self-licensing condition using less self-affirmation compared to those in the control condition. It was also expected that self-esteem has a main effect on self-affirmation, such that participants with lower self-esteem will use more self-affirmation compared to those with higher self-esteem. Lastly, it was expected that there is an interaction between self-licensing and self-esteem, with high self-esteem leading to weaker effects of self-licensing on self-affirmation than low self-esteem.

None of these expectations were confirmed. Thus, the results did not confirm that when individuals engaged in self-licensing, they used more self-affirmations to protect their self-esteem compared to those who did not engage in self-licensing. The results did not confirm that individuals with low self-esteem use more self-affirmations compared to those with high self-esteem, but they suggested that individuals with high self-esteem use more self-affirmation than individuals with low self-esteem. Lastly the results also did not confirm the assumed interaction effect.

Despite that results did not confirm that individuals with low self-esteem do use more self-affirmations than those with high self-esteem, results did show that individuals with high self-esteem do use more self-affirmations than those with low self-esteem, which is the opposite and an unexpected finding. This finding could be explained by a study of Durling and Jessop (2015), who revealed that there are some doubts about the direction of the relation between self-esteem and self-affirmation. They mentioned a study of Baumeister, Smart and Boden (1996), who suggested that some individuals use automatically more self-affirmations. This means that when that individual is perceiving a threat for their self-esteem, such as goal discrepant behaviour, one automatically starts thinking about all the things one succeeded in. Therefore, the self-esteem of this individual is protected before it could drop. The self-esteem is protected by automatic self-affirmations and could therefore be higher for these individuals compared to those who do not use self-affirmations automatically. Future research could investigate this relation further.

Results suggested that that age was a significant predictor for self-affirmation, showing that an older age was paired to higher self-affirmation. Studies did not find a relation between age and self-affirmation before, but they did find a relation between age and self-esteem (Robin, Trześniewski, Tracy, Gosling & Potter, 2002). According to this study self-esteem is at lowest in adolescence and rises gradually during adulthood. Results in the current study also suggested self-esteem to be a significant predictor for self-affirmation, showing that higher self-esteem was paired to higher self-affirmation. Therefore, a mediation analysis was performed to explore whether self-esteem is a mediator between age and self-affirmation, which was confirmed. Relatively, little is known about

the relation between these three concepts. Therefore, these results could be further explored in future research to determine whether the relation between these concepts is coincidence or they are actually related.

Limitations and recommendations

The first limitation is that assumptions of the analysis were sometimes violated. Multicollinearity was violated in the regression analysis for the interaction effect of self-licensing and self-esteem and self-licensing even though the variables were mean-centered. This indicates that it could have affected the calculation in the regression analysis of the individual predictors (Field, 2013). Therefore, the results of the regression analysis of these two predictors could be negatively influenced through the effect of multicollinearity.

Second, the power of the study was not ideal, because the sample size did not meet the minimum of 114 participants. When a sample size is too low it has a negative influence on the external validity of the study (Neuman, 2014). The generalizability of this study could therefore be questioned.

Third, vignettes have been used frequently in previous studies to manipulate variables in very specific and controlled settings (Prinsen et al., 2019), such as the current study that requires a specific event to take place. Therefore, it could contribute to studying variables as self-licensing. But there are some limitations to vignettes, which could have caused that the expectations were not confirmed. For example, according to Hughes and Huby (2012), vignettes are vulnerable for a weak internal validity. Hughes and Huby (2012) propose a pilot prior to the actual experiment. This pilot could strengthen the internal validity of the vignettes, especially when the study requires vignettes to be as realistic as possible. It could also be interesting to manipulate self-licensing in a livelier way. For example, a previous study from Hall (2009) showed that participants could identify themselves more with someone else when they watch a short reality video. Therefore, it could be helpful to use short reality videos to show participants an individual who uses self-licensing. Participants could identify themselves better and the internal validity could therefore be improved. As diaries has shown to be effective in examining self-regulation failure in dieting (Adriaanse, de Ridder & de Wit, 2009), it could be interesting for future research to perform a similar study, proposing that people in a self-regulation dilemma describe situations where they were tempted, and whether they come up with licences in a diary for 7 days. This way, empathizing and identifying with a person in a self-licensing situation is not a problem anymore as they are in the situation themselves. Therefore, the internal validity could be improved.

Fourth, although the included self-esteem scale and affirmation measures are well-known questionnaires, they measure self-esteem and self-affirmation as a trait, which means as stable and persistent concepts. But self-esteem sometimes fluctuates in social situations and falls and rises by one's success experiences, which indicates it could also be a state of mind (Heatherton & Polivy, 1991). Although little is known about self-affirmation as a trait

or as a state of mind, the proposed theory assumed that self-affirmation after engaging in self-licensing is also more a state of mind. Therefore, it could be interesting for future research to use questionnaires that measure self-esteem and self-affirmation as a state of mind. A state self-esteem questionnaire (Heatherton & Polivy, 1991), could test how participants feel directly after engaging in self-licensing and self-regulation failure. A state self-affirmation questionnaire could be developed to check whether self-affirmations are used directly after engaging in self-licensing and self-regulation failure.

Lastly, during the covid-19 situation there could have been some extra goals for participants to achieve, such a hand washing and social distancing. Participants could have prioritised these goals over their eating goals. When food is perceived as less forbidden, the self-regulation dilemma is not as strong as it should have been for the current study. Therefore, it could be interesting to examine self-licensing in behaviours typical for the covid-19 era like hand washing, keeping to rules of the government relating to social distancing.

Conclusion

In the present study neither self-licensing nor the interaction of self-licensing with self-esteem were significant predictors of self-affirmation in the present work. Self-esteem was a significant predictor, but not as it was expected. Future research could investigate these concepts in real-life contexts, following people in self-regulation dilemma's during their daily lives and measuring self-esteem and self-affirmation as a state rather than trait. Explanatory analyses suggested a relation between age and self-affirmation which is possibly mediated by self-esteem. Future research could explore this relationship more elaborately. Lastly it could be interesting to investigate self-licensing, self-esteem and self-affirmation in other behavioural domains such as hand washing and social distancing, as due the covid-19 situation these goals could have been prioritised over eating goals.

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Appendix A Full questionnaire

Informed Consent

Dear participant,

For our master's thesis Health Psychology at Utrecht University we are doing research to learn more about storytelling in eating-related contexts. We would appreciate your participation in the study. The participation consists of reading a small story and filling in a questionnaire. The questionnaire will be answered completely anonymously, and all information will be handled with confidentiality. This means that the data cannot be traced back to you. Participation in the study is completely voluntary. You can choose to stop your participation in the study at any time, without an explanation. In case of full completion of the questionnaire, you will be reimbursed. Participation in the study is only possible when the study is explained to you prior to participating, and if you give permission for participating in the study. On the next page you can indicate whether you want to participate in this study or not. For further questions about the study you can reach us at the e-mail address:

c.t.hartkoorn@students.uu.nl

Thank you in advance for your participation!

Yours sincerely,

Isaura Cooke, Merel Houtman and Christel Hartkoorn

Self-licensing manipulation

On the next page you will read a description of a situation. Try to imagine the situation as lively as possible. Try to empathize with the person in the situation and try to imagine how you would feel and act at that moment. After that, a few questions will be asked about this specific situation. We want to stress that it is very important to really imagine as if you were the character described in the story. Thus, try to imagine the situation as if you were in that particular moment and how you would act and feel.

Self-licensing condition

Summer season is around the corner and you would really like to lose a few pounds. Therefore, you have decided to start a diet a while ago, which you are still sticking to.

This evening you are sitting on the couch and you are watching TV. Suddenly you start craving crisps. Due to the corona virus you have been staying at home for weeks without being able to see your friends. You reason that you deserve some crisps now, because you feel lonely, isolated and sad due to this social isolation. Although it is not in line with your diet, you end up eating the entire bag of crisps.

Control condition

Summer season is around the corner and you would really like to lose a few pounds. Therefore, you have decided to start a diet a while ago, which you are still sticking to.

This evening you are sitting on the couch and you are watching TV. Suddenly you start craving crisps. Due to the corona virus you have been staying at home for weeks without being able to see your friends. You reason that you deserve some crisps now, because you feel lonely, isolated and sad due to this social isolation. Although it is not in line with your diet, you end up eating the entire bag of crisps.

Manipulation check

Instructions: To see if you read the story well, please answer the following questions.

1. To what extent did the character described in the story have a valid reason to eat chips?
2. What was the reason for the character described in the story to eat the bag of crisps?

Questionnaire self-esteem

Instructions: Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1. On the whole, I am satisfied with myself.
2. At times I think I am not good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I'm a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.

9. All in all, I am inclined to feel that I am a failure.

10. I take a positive attitude toward myself.

Possible answers to every item: Strongly Agree to strongly disagree (4-point likert). Items 2, 5, 6, 8, 9 are reverse scored. Give “Strongly Disagree” 1 point, “Disagree” 2 points, “Agree” 3 points, and “Strongly Agree” 4 points. Sum scores for all ten items. Keep scores on a continuous scale. Higher scores indicate higher self-esteem.

Questionnaire self-affirmation

Instructions: Sometimes when we face difficulties, challenges or problems in our daily lives we can find ourselves thinking about ourselves. We are interested in how often you find yourself thinking about yourself when things start to bother you.

When I feel threatened or anxious by people or events, I find myself...

1. ... thinking about my strengths.
2. ... thinking about my values.
3. ... thinking about my principles.
4. ... thinking about the people who are important to me.
5. ... thinking about what I stand for.
6. ... thinking about my family.
7. ... thinking about my friends.
8. ... thinking about the things I am good at.
9. ... thinking about the things I like about myself.
10. ... thinking about the people I love.
11. ... thinking about the people I trust.
12. ... thinking about the things I believe in.
13. ... remembering things, I have succeeded at.

The possible answers (7-point Likert) range from ‘disagree completely’ to ‘agree completely’.

Control question

Please select the button ‘Agree’ to show that you are paying attention to the questions.

Strongly agree **Agree** Disagree Strongly disagree

Questionnaire Restricted eating

1. Do you watch your weight?
2. Do you watch what you eat in order to lose weight or to not gain weight?
3. Do you watch what you eat for your general health?

Possible answers to the three questions above:

Strongly agree to Strongly Disagree

Demographics

Sex:

Male Female Other

Age:

Only 18+

BMI:

1. What is your height? If unsure, make an estimate.
2. What is your weight? If unsure, make an estimate.

SES:

Think of a ladder (see image) as representing where people stand in society. At the top of the ladder are the people who are best off; those who have the most money, most education and the best jobs. At the bottom are the people who are worst off; who have the least money, least education and the worst jobs or no job. The higher up you are on this ladder, the closer you are to the very top and the lower you are, the closer you are to the bottom. Where would you put yourself on the ladder? Choose the number whose position best represents where you would be on this ladder.

Debriefing

Thank you for your participation!

The true purpose of the study you participated in is to gain information about using emotions as justification to break one's diet. Such emotional justifications can be: "I deserve to eat it, because I am sad". We assume that *emotional justifications* are helpful to protect self-integrity and that personal differences in self-esteem are important as well. To this end, there were two different groups. Half of the respondents read a story in which the character described in the story used an emotional justification for eating chocolate. For the other half of the respondents the story did not include such emotional justification. Through this study we tried to obtain some answers for our assumptions.

If you would like to have more information about this subject or if you have any other questions about the research, please contact c.t.hartkoorn@students.uu.nl.

Yours sincerely,

Isaura Cooke, Merel Houtman & Christel Hartkoorn

Path 2: I do not agree with the terms stated above and will not participate.

Thank you for indicating your preference.

Yours sincerely,

Isaura Cooke, Merel Houtman & Christel Hartkoorn

