



'I ate too much so I must have been sad': Emotions as a confabulated reason for overeating



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ABSTRACT

Background: Emotional eating (i.e., overeating in response to negative affect) is a commonly accepted explanation for eating behaviors that are not in line with personal eating-norms. However, the empirical evidence for a causal link between self-reported emotional eating and overeating is mixed. The present study tested an alternative hypothesis stating that high emotional eating scores are indicative of a susceptibility to use negative affect as a confabulated, post-hoc reason to explain overeating.

Methods: Female students ($N = 46$) participated in a 'taste-test' and came back to the lab a day later to receive feedback that they either ate too much (norm-violation condition) or an acceptable amount of food (control condition), whereafter emotional eating was assessed. Negative affect was measured several times throughout the study.

Results: In the norm-violation condition, participants with high emotional eating scores retrospectively rated their affect prior to eating as more negative than participants with low emotional eating scores. In the control condition, no effect of emotional score on affect ratings was found.

Discussion: For some individuals emotional eating scores may represent a tendency to retrospectively attribute overeating to negative affect. This could explain the lack of consistent findings for a link between self-reported emotional eating and overeating.

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1. Introduction

Being an 'emotional eater' is one of the most frequently 'blamed' personality characteristics for overeating. To illustrate, women's magazines regularly publish self-tests on whether you are an emotional eater, and searching for emotional eating on Google generates more than 12,500,000 results. These websites range from forums where people suffering from emotional eating can support each other to websites promoting self-help books or certain types of therapy to help deal with emotional eating. The general public thus seems to have accepted emotional eating—in the literature defined as 'the tendency to overeat in response to negative emotions such as anxiety or irritability' (Van Strien et al., 2007, p. 106)—as a common cause for overeating that is difficult to overcome. The

scientific literature, however, is not unequivocally convinced that people describing themselves as emotional eaters indeed are frequently overeating as a result of negative emotions. That is, recent studies suggest that the claim that self-reported emotional eaters eat in response to negative emotions is problematic, because personal perceptions of being an emotional eater might suffer from retrospective biases (e.g., Adriaanse, De Ridder, & Evers, 2011).

These doubts on the predictive validity of self-reported emotional eating stem from prospective and experimental studies testing the association between self-reported emotional eating tendencies and subsequent food intake upon experiencing negative emotions. Although some studies have demonstrated that self-reported emotional eating status moderates the stress-eating relationship (O'Connor, Jones, Conner, McMillan, & Ferguson, 2008; Oliver, Wardle, & Gibson, 2000; Van Strien, Herman, Anschutz, Engels, & de Weerth, 2012), many studies also did not find evidence for such an effect. For example, Evers, De Ridder, and Adriaanse (2009) tested whether self-reported emotional eaters consumed more palatable foods than individuals not judging

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themselves as emotional eaters in an ostensibly unrelated taste test when negative emotions were induced in the lab. None of the four studies that were reported yielded evidence that self-reported emotional eaters ate more in response to experiencing negative emotions than people who scored low on emotional eating. Replicating these findings, Bongers, Jansen, Havermans, Roefs, and Nederkoorn (2013) and Bongers, Jansen, Houben, and Roefs (2013) reported that inducing a negative mood did not increase the calorie consumption of emotional eaters during an alleged taste test or unobtrusively observed milkshake consumption (in fact, Bongers, Jansen, Havermans et al., 2013 report evidence that self-reported emotional eaters increase their food intake during positive emotions). These findings are further corroborated by studies outside the lab that also found no significant relation between self-reported emotional eating and unhealthy snack consumption (assessed in a 7-day diary) preceded by negative emotions (Adriaanse et al., 2011; Conner, Fitter, & Fletcher, 1999). In a similar vein, O'Connor and O'Connor (2004) did not find that emotional eaters consumed more snacks in periods of stress compared to stress-free periods. Extending these findings to a sample with highly problematic weights, Brogan and Hevey (2013) found that emotional eater status did not moderate food intake in response to negative emotions among a morbidly obese sample.

These studies illustrate that self-reported emotional eating status may thus not consistently predict food intake under emotional circumstances. Still, a large number of cross-sectional studies have reported significant correlations between self-reported emotional eating and food intake (e.g., Newman, O'Connor, & Conner, 2007; Van Strien et al., 2007). As the proposed causal link from self-reported emotional eating status to increased food intake is not consistently supported, there appears to be an alternative pathway through which food intake and emotional eating status are related that might explain these correlations between emotional eating and food intake. Indeed, it has been suggested that—rather than representing the tendency to eat as a *consequence* of being emotional—rating oneself as an emotional eater might reflect a tendency to *post-hoc attribute* (over) eating to the experience of negative emotions (Adriaanse et al., 2011).

That is, it has been argued that self-reports on emotional eating are hindered by a 'triple recall bias' (Evers et al., 2009), as they require individuals to "recall their negative emotions, their eating behavior, and the association between both" (Evers et al., 2009, p. 718), with the result that people may post-hoc overestimate the degree to which their food intake was influenced by negative emotions. The present study was designed to test this suggestion that high emotional eating scores represent a susceptibility to use negative affect as a confabulated, post-hoc reason to explain overeating.

This alternative account of self-reported emotional eating status is inspired by research highlighting that much of our behavior, including our food-related behaviors and choices, are the result of nonconscious processes that involve little conscious deliberation (Cohen & Farley, 2008; Sheeran, Gollwitzer, & Bargh, 2013; Wansink & Sobal, 2007; Wansink, 2010). As a result, people are frequently confronted with an 'explanatory vacuum' (a situation where people do not have access to the reason for their behavior; Oettingen, Grant, Smith, Skinner, & Gollwitzer, 2006; Parks-Stamm, Oettingen, & Gollwitzer, 2010), which has been found to trigger a tendency to confabulate (make-up) a reason that makes the most sense (e.g., Adriaanse, Weijers, De Ridder, De Witt Huberts, & Evers, 2014; Bar-Anan, Wilson, & Hassin, 2010). For example, it has been found that dieters who indulged in chocolate as a result of being primed with hedonic words, were more inclined to adopt the explanation that they were mentally fatigued before eating the chocolates (Adriaanse et al., 2014). This tendency to confabulate a

reason for the nonconsciously activated behavior is particularly pronounced when the nonconsciously provoked behavior is norm-violating (i.e., when the nonconsciously provoked behavior *demands* an explanation, such as, when a salient social norm to act cooperatively is violated; Oettingen et al., 2006). Importantly, confabulation should be conceived of as 'lying without the intent to deceive' (Hirnstain, 2009), meaning that although confabulated reasons for norm-violation are inaccurate, they do not reflect conscious attempts to deceive, but rather a reflexive attempt to fill the explanatory vacuum (Parks-Stamm et al., 2010).

As the media frequently convey the message that overeating is often the result of emotional eating, negative emotions represent a very accessible and highly plausible reason for overeating for many people. Seeing that people are particularly inclined to attribute their behavior to reasons that are accessible and plausible (Adriaanse et al. 2014; Bar-Anan et al., 2010; Nisbett & Wilson, 1977; Tversky & Kahneman, 1973), it is thus highly likely that especially people who see themselves as emotional eaters are inclined to post-hoc attribute overeating to the experience of negative emotions when the true cause for overeating is inaccessible (i.e., when experiencing an explanatory vacuum).

1.1. The present study

This study was designed to test the hypothesis that higher scores on emotional eating represent a susceptibility to use negative emotions as confabulated, post-hoc reason to explain overeating. To test this assumption, participants first watched a neutral video and then consumed some snacks in a so-called estimation task that required a prescribed amount of food intake. A day after consuming the snacks, participants received false feedback on how much they ate during this task. Participants in the norm-violation condition were led to believe that they ate too much, whereas participants in the control condition were led to believe that they ate the required amount of food. After receiving feedback on the task, participants were provided with the opportunity to confabulate that negative affect led them to overeat by retrospectively rating their emotions after watching the video (and thus right before eating). An interaction between self-reported emotional eating status and condition on retrospective negative affect was expected: For participants who receive the norm-violating feedback, having higher scores on emotional eating was expected to lead to higher scores on retrospective negative affect, despite the fact that actual negative affect after watching the video should not differ between high vs. low emotional eaters. The rationale behind this is that only for people who perceive of themselves as emotional eaters experiencing negative emotions constitutes a highly plausible reason to post-hoc attribute overeating to. For participants in the neutral feedback condition, retrospective negative affect was expected to be low for all participants as this group does not experience a need to confabulate (they were led to believe to have acted norm-conforming).

2. Method

2.1. Participants and design

A total of 46 female students participated in the present study in return for 8 Euro or course credit. They had a mean age of 21.00 years ($SD = 2.40$) and a mean BMI of 21.85 ($SD = 2.69$). The study had a 2 Feedback (norm-violation vs. neutral) x 2 Emotional Eating Status (high vs. low) between subjects design, with emotional eating status as a continuous variable. Feedback was manipulated between subjects and self-reported emotional eating status was assessed using the Dutch Eating Behavior Questionnaire (DEBQ;

Van Strien, 2005). Retrospective ratings of negative affect (NA) served as the dependent variable.

2.2. Procedure

Female students were invited to participate in a study consisting of two parts conducted on two consecutive days. Upon arrival in the lab, participants were told that they would be asked to fill out a short questionnaire, watch a short video, and do an estimation task in which they would judge the weight of different types of food (cover-story). After giving informed consent, the study started with a baseline measure of negative affect (NA:T0). Next, an affectively neutral 5-min video about sea turtles was shown. The purpose of including the video was twofold. It served to (a) ensure that actual levels of negative affect before eating were relatively low to allow for a retrospective overestimation of negative affect, and to (b) provide a source to retrospectively misattribute negative affect to. The video was followed by a second measurement of affect (NA:T1) to assess actual levels of negative affect after watching the video. Subsequently, the estimation task was administered. Participants were provided with four types of snacks (M&M's, marshmallows, cookies, and baby carrots) and were asked to try to eat exactly 20 g of each snack. After completing this task, an appointment was scheduled for the next day.

On the second day, participants were randomly assigned to one of the two Feedback conditions; the control ($N = 23$) or the norm-violation condition ($N = 23$). Participants returned to the lab where they received false feedback on the estimation task, which served as our manipulation of norm-violation. Participants in the control condition were told that they consumed roughly the prescribed amount of 20 g of each snack, and that this closely resembled the average amount that other participants had consumed. Participants in the norm-violation condition heard that they ate more than the prescribed amount of snacks, summing up to a total of 511 consumed calories, and that this was substantially more than the average amount of calories consumed by other participants. Hereafter, participants' affect was measured (NA:T2), which served as a manipulation check (i.e., we expected participants who were told that they had violated the norm would feel more negative). Then, participants were given the opportunity to confabulate a reason for overeating, by asking them to retrospectively report on their affect just before the estimation task, after seeing the video of sea turtles (NA:T1-R). Emotional eating was assessed in the final questionnaire, which further included an assessment of age, height, weight, target weight, restrained eating and external eating behavior.

3. Materials

3.1. Affect

Negative affect was assessed with 15 items. Participants were asked to indicate how jittery, worrisome, nervous, miserable, depressed, sad, aggressive, washed-out, frustrated, angry, anxious,

moody, scared, guilty, and irritable they felt on a scale ranging from 1 (hardly or not at all) to 5 (very much, a lot). A mean score was computed. Participants reported on their negative affect at day 1 at baseline (NA:T0; $\alpha = 0.85$) and after seeing the video (NA:T1; $\alpha = 0.83$); at day 2 after receiving feedback (NA:T2; $\alpha = 0.88$), and they then (again) retrospectively rated how negative they felt after viewing the video (NA:T1-R; $\alpha = 0.86$).² This retrospective score for negative affect at T1 represents the main dependent variable in the present study.

3.2. Video

To provide participants with a source that they could (falsely) ascribe negative affect to and to ensure that participants in reality felt relatively neutral before eating, a neutral 5-min wildlife video about sea turtles was selected from YouTube. This video was expected to be affectively neutral, meaning that participants would not feel particularly negative or positive after seeing it.

3.3. Bogus estimation task

All participants received four equally sized bowls filled with M&M's, marshmallows, cookies and baby carrots. Participants who indicated that they disliked the baby carrots could trade these for a bowl of cherry tomatoes, and the M&M's, marshmallows or cookies could be traded for crisps. Participants were told that they were performing an assessment task and were instructed to estimate how much of each of these snacks would constitute 20 g, by trying to eat exactly this amount.

3.4. Feedback manipulation

All participants who returned to the lab the second day received false feedback on the estimation task. It was explained that with the estimation task we investigated whether people will overeat (violate the norm) when exposed to unhealthy food. Participants then received false feedback on how much they consumed of each snack. In the norm-violation condition participants were told: "You consumed 193 kilocalories/199 kilocalories on M&M's/cookies. This is more than the 20 g that you had to eat" and "You consumed 106/13 kilocalories on marshmallows/carrots. This was about the same as the 20 g you were supposed to eat". Finally they were told: "In total you ate 511 kilocalories. This is substantially more than other participants in this experiment". The number of kilocalories and the reference to the consumption of other participants was added to increase the sense of norm-violation and to give participants the feeling that their food intake had indeed been measured. For credibility, the number of calories and whether or not the norm was violated was varied between the snacks. Participants in the control condition were told: "You ate approximately 20/18/19/20 g of M&M's/marshmallows/cookies/carrots. You did not overeat". The feedback on their overall consumption indicated that they ate the required amount of food, and that they ate approximately the same amount of food as the other participants".

3.5. Final questionnaire

In the final questionnaire, the Dutch Eating Behavior Questionnaire (DEBQ; Van Strien, 2005) was administered to assess emotional eating (13-item subscale, $\alpha = 0.92$). Example items are "When you feel disappointed, do you feel like eating?" and "When

² Other items that are not reported on include one item assessing 'how emotional participants felt' after seeing the movie at T1 and T1-R, 12 items measuring participants' physical state at baseline (T0) and 5 items assessing positive affect that were interspersed with the negative affect items. The first two items remained unaffected by the feedback manipulation and revealed no significant differences between conditions at both time points. Participants' physical state was assessed for exploratory reasons, and also yielded no significant difference between conditions. Positive affect items were included to avoid a strong emphasis on negative affect whilst conducting the study. As could be expected, for all analyses including negative affect, substituting negative affect with positive affect showed an inverse outcome pattern.

you are bored or feeling restless, do you feel like eating?', The DEBQ further consists of the 10-item external eating subscale (e.g., 'If food smells and looks good, do you eat more than usual?', $\alpha = 0.80$) and the 10-item restrained eating subscale³ (e.g., 'Do you keep track of how much you eat?', $\alpha = 0.94$). In the DEBQ answer options range from 1 (*never*) to 5 (*very often*). After providing their age, participants reported their height and weight from which participants' Body Mass Index (BMI) was computed. Lastly, participants were asked about their target weight as weight loss goals may affect participants' perceptions of norm-violation. Participants' weight loss goal was calculated by subtracting their target weight from the current weight.

4. Results

4.1. Descriptives and correlations

Participants on average scored 2.52 ($SD = 0.67$) on emotional eating, 3.16 ($SD = 0.52$) on external eating, and 2.54 ($SD = 0.78$) on restrained eating. Mean scores, standard deviations and intercorrelations for the variables under study can be found in Table 1.

4.2. Randomization check

An ANOVA with Feedback as independent variable and age, BMI, weight loss goal, negative affect at baseline (NA:T0), restrained eating, emotional eating and external eating as dependent variables revealed successful randomization, all p 's > 0.14.

4.3. Randomization check: video

To check whether there were no differences between the conditions in reported negative affect after seeing the video, an ANOVA with Feedback as independent variable and negative affect seeing

$SD = 0.30$), $F < 1$, $p = 0.37$, $\eta^2 = 0.02$.⁴

5. Manipulation check: feedback

To check whether the false feedback indeed resulted in participants in the norm-violation condition feeling more negative compared to participants in the neutral feedback condition, an ANOVA with Feedback as independent variable and negative affect after receiving feedback (NA:T2) as dependent variable was conducted. The results showed that participants in the norm-violation condition indeed scored higher on negative affect ($M = 1.40$, $SD = 0.45$) than participants in the control condition ($M = 1.17$, $SD = 0.16$), $F(1, 44) = 5.75$, $p = 0.021$, $\eta^2 = 0.12$.

As the manipulation was set out to create a sense of norm-violation for all participants, regardless of their dieting status, an additional hierarchical regression analysis was performed to test whether the effect of Feedback on negative affect was indeed not moderated by restrained eating. Feedback condition and restrained eating (mean centered) were added as predictors in Step 1, and the interaction term condition \times restrained eating was entered in Step 2. No significant condition \times restrained eating interaction was found, $p = 0.28$. These results confirm that the Feedback manipulation was effective and that the effect of Feedback on affect did not depend on participants' dieting status.

In addition, emotional eating was found to be uncorrelated with reported negative affect after receiving feedback (NA:T2), $r = 0.19$, $p = 0.22$. A similar interaction analysis with Feedback condition and emotional eating also showed that the effect of Feedback on affect did not depend on participants' emotional eating status, as the condition \times emotional eating interaction was not significant, $p = 0.15$.

5.1. Main analysis

Table 1

Means, standard deviations and intercorrelations of BMI, weight loss goal, negative affect reported at baseline (NA:T0), after the video (NA:T1), after feedback (NA:T2) and retrospectively (NA:T1-R), and the subscales of the DEBQ.

Measure	Norm-violation ($n = 23$)		Control ($n = 23$)		Total ($n = 46$)		1	2	3	4	5	6	7	8	
	mean	sd	mean	sd	mean	sd									
1. BMI	22.05	2.96	21.65	2.44	21.85	2.69									
2. Weight loss goal	3.61	3.22	2.43	2.89	3.02	3.08	0.74**								
3. NA:T0	1.49	0.48	1.32	0.25	1.41	0.39	0.04	-0.06							
4. NA:T1	1.47	0.43	1.37	0.30	1.42	0.37	0.05	0.04	0.73**						
5. NA:T2	1.40	0.45	1.17	0.16	1.28	0.35	-0.16	0.06	0.54**	0.62**					
6. NA:T1-R	1.49	0.43	1.39	0.34	1.44	0.39	-0.03	0.16	0.34*	0.75**	0.53**				
7. Emotional eating	2.44	0.52	2.60	0.79	2.52	0.67	-0.06	0.12	0.00	0.09	0.19	0.06			
8. Restrained eating	2.50	0.70	2.59	0.87	2.54	0.78	0.03	0.33*	-0.06	0.00	0.26	0.18	0.01		
9. External eating	3.15	0.49	3.18	0.56	3.16	0.52	0.05	0.00	0.13	0.23	0.08	0.25	0.52**	-0.18	

* $p < 0.05$, ** $p < 0.01$.

the video (NA:T1) as dependent variable was conducted. It was confirmed that at that point there was no difference in reported negative affect between participants in the norm-violation condition ($M = 1.47$, $SD = 0.43$) and the control condition ($M = 1.37$,

To test the hypothesis that self-reported emotional eaters in the norm-violation condition would retrospectively report to have felt more negative after the video, hierarchical regression analyses were performed with retrospective negative affect (NA:T1-R) as outcome variable. Feedback and emotional eating (centered) were

³ The 10-item Restraint Scale (RS; [Herman & Polivy, 1980](#); $\alpha = 0.80$) was also included in addition to the restraint eating subscale of the DEBQ ([Van Strien, 2005](#)), because both scales tap into different aspects of dietary restraint ([Heatherton, Herman, Polivy, King, & McGree, 1988](#); [Polivy & Herman, 2014](#)). As the same results were obtained for both scales, for sake of brevity only results for the restrained eating subscale of the DEBQ are reported.

⁴ A mixed design ANOVA with condition as between-subjects factor and negative affect at baseline (T0) and after the video (T1) as within-subjects variable showed a similar outcome pattern. There was no significant effect of time, $F(1,44) = 0.079$, $p = 0.78$, partial $\eta^2 = 0.002$, nor a significant condition \times time interaction, $F(1,44) = 0.71$, $p = 0.41$, partial $\eta^2 = 0.016$.

added as predictors in Step 1, with negative affect after watching the video (NA:T1) as a covariate to control for actual levels of negative affect after watching the video.⁵ The interaction term of condition \times emotional eating was added in Step 2. The first step was significant, $F(3, 42) = 18.23, p < 0.001$, adjusted $R^2 = 0.54$, with negative affect after watching the video (NA:T1) as the only significant predictor $\beta = 0.75, t = 7.26, p < 0.001$ (other p 's > 0.82). Adding the interaction term led to a statistically significant increase in R^2 of 0.06, $F(4, 41) = 16.94, p < 0.001$, with main effects comparable to the first model and a significant effect, $\beta = 0.29, t = 2.50, p = 0.017$, for the interaction term. As expected, a simple slopes analysis revealed that there was a significant positive linear relationship (0.01 ± 0.42) between emotional eating and negative affect in the norm-violation condition, $p = 0.045$, indicating that within the norm-violation condition, participants scoring high on emotional eating reported higher retrospective ratings of negative affect as compared to participants scoring low on emotional eating. No significant linear relationship (-0.23 ± 0.04) was found in the control condition, $p = 0.17$, which was also conform our expectations as none of the participants in this group, regardless of emotional eating status, experience a need to confabulate as they were led to believe that they had acted norm-conforming. See Fig. 1 for a graph of the interaction effect between Feedback and emotional eating status on retrospective ratings of negative affect (NA:T1-R).

5.2. General discussion

The present study was designed to test the hypothesis that people who perceive themselves as emotional eaters are more inclined to attribute overeating to negative emotions than people who do not identify as emotional eaters. A false-feedback paradigm was employed to create a sense of norm-violation without having a clear explanation for it (i.e., to create an 'explanatory vacuum'; Oettingen et al., 2006). It was hypothesized that participants who see themselves as emotional eaters and who learn that they overate



Fig. 1. Interaction effect between Feedback (control condition vs. norm-violation condition) and emotional eating status in affecting retrospective ratings of negative affect (NA:T1-R), while controlled for negative affect at T1.

⁵ To rule out the possibility that the reported findings reflect a mood congruent memory bias in emotional eaters rather than an attempt to attribute overeating to negative emotions, the regression analysis was also performed with NA:T2 as an additional covariate. Results showed that including this covariate still yielded a significant interaction effect of condition \times emotional eating ($\beta = 0.28, t = 2.33, p = 0.025$), and that NA:T2 was not a significant covariate in the model, making the mood congruency bias highly unlikely.

would retrospectively rate their emotions prior to engaging in eating as more negative as compared to people who do not perceive themselves as emotional eaters and who receive the same norm-violation feedback. The results confirmed our hypothesis: Participants who learned that they had consumed more than the norm and who scored high on emotional eating, retrospectively—i.e., after receiving feedback regarding their norm-violation-rated their emotions prior to eating as more negative as compared to people who scored low on emotional eating. No effect of emotional eating status on retrospective negative affect was found in the neutral feedback condition, which is to be expected as participants in this condition were not set up to experience a need to confabulate (they acted norm-conforming). Importantly, as (a) actual negative affect after watching the video was also assessed and did not differ for the two experimental conditions and (b) the provided feedback regarding norm-violation was false, the increase in negative affect reported by self-reported emotional eaters in the norm-violation condition is likely to be the result of confabulation.

The present findings are in line with previously voiced concerns regarding the potential for retrospective biases in self-reported emotional eating status (for a recent overview see: Domoff, Meers, Koball, & Musher-Eizenman, 2014). That is, it has been posited that self-reports on emotional eating are limited as they may likely suffer from a 'triple recall bias' (Evers et al., 2009) and are consequently more likely to represent a tendency to attribute (over) eating to emotions when people are concerned about their food intake (Adriaanse et al., 2011). The present findings also align with studies demonstrating that people have a tendency to confabulate reasons for their behavior when they do not have access to the cause of a behavior that 'demands' an explanation (e.g., because an explanation is requested by the experimenter, Bar-Anan et al., 2010, or because it is norm-violating, Adriaanse et al., 2014; Oettingen et al., 2006; Parks-Stamm et al., 2010). More in general, the present study has strong ties to work by Wilson and colleagues (e.g., the classic work by Nisbett & Wilson, 1977) on self-knowledge demonstrating that people prefer to believe that they have conscious control over their behavior (the 'illusion of conscious will') and relatively poor self-knowledge with the consequence that they construct explanations for their behavior based on whatever reason seems plausible and accessible to them (Wilson, 2002).

The present study is not without limitations and a first limitation is that this is only one study with limited power for testing our hypotheses. Although the present findings convincingly support frequently voiced suggestions about retrospective biases among emotional eaters (e.g., Adriaanse et al., 2011; Evers et al., 2009), and it builds on established work on confabulation (e.g., Oettingen et al., 2010) and limited self-knowledge (e.g., Wilson, 2002), still the limited power in this sample warrants additional studies with larger sample sizes to replicate this effect before any conclusions should be drawn. A second limitation of the present study is that emotional eating status was assessed at the end of the study to avoid creating awareness about the purpose of the study. Although emotional eating is, similar to the eating styles of restraint and external eating, generally described as a trait variable, it is possible that emotional eating scores were affected by the experimental procedure. There is for example evidence that visceral, or hot, states such as hunger can affect self-reports for external eating (Bekker, Van de Meerendonk, & Mollerus, 2004; Evers et al., 2011) and emotional eating could potentially be similarly affected by increasing focus on affect or instructing participants to eat as is done in the present study. While this possibility cannot be completely ruled out, the observation that emotional eating scores did not differ between the two feedback conditions (see randomization check) and were also not significantly correlated with negative affect at any time points (see Table 1), strengthens our

confidence that emotional eating scores were unaffected by the experiment. Yet, to completely rule out the possibility that emotional eating is affected by the experimental procedure, future research could assess emotional eating several weeks before the experiment.

It should also be noted that the results from the present study can only be generalized to self-reported emotional eating as assessed by the DEBQ (van Strien et al., 2005). While there is no evidence to suggest that effects would be different when other emotional eating scales are used, the generalizability of the present effects to other scales should be scrutinized in future studies. Additionally, it is important to explicate that the observation that self-reported emotional eaters were more inclined to post-hoc attribute their (over) eating to negative emotions, does not mean that it should be concluded that emotional eating scores never represent a causal link between negative emotions and eating. Yet, taking into account the present findings and the observation that the predictive validity of self-reported emotional eating on food intake in response to negative emotions is mixed at best (Adriaanse et al., 2011; Bongers, Jansen, Havermans et al., 2013; Bongers, Jansen, Houben et al., 2013; Brogan & Hevey, 2013; Conner, Flitter, & Fletcher, 1999; Evers et al., 2009; O'Connor & O'Connor, 2004) it is likely that for some individuals emotional eating scores represent a tendency to retrospectively attribute overeating to negative emotions rather than (or in addition to) an actual tendency to eat in response to negative emotions. Conceptual replications of the present study, preferably with larger sample sizes, could further strengthen this proposition. Lastly, we would to point out that negative affect ratings were overall low throughout the study due to our choice for an affectively relatively neutral video to ensure that actual negative affect before eating was low. Findings should therefore be interpreted in terms of relative differences in retrospective negative affect between high vs. low emotional eaters in the two feedback conditions, rather than in terms of the absolute scores on retrospective negative affect for each of these subgroups.

To conclude, whereas emotional eating is a commonly accepted explanation for overeating, people's beliefs about their tendency to eat in response to negative emotions might not be solely the result of actual emotion induced eating. Rather, this belief may be reinforced by a need to explain overeating when the cause for doing so is not easily identified. This post-hoc confabulation account of emotional eating opens up new avenues to advance our understanding of how self-reported emotional eating status and overeating relate to one another.

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