"Stressed Spelled Backward Is Desserts"

Affective Determinants of Eating Behavior

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INTRODUCTION

Thinking about affect and eating, examples of negative emotions leading people to consume more than they want easily come to mind. Take Marcia, who just broke up with her boyfriend and is feeling very sad. To cope with these negative feelings, she consumes a big bag of crisps, only to feel even sadder afterward. Or take Mark, who was just turned down for a job he really liked. Mindlessly he empties the cookie jar, while ruminating about the reasons why he was not picked for the job. Or take Jessie, who feels bad about just having had a fight with her best friend. She reasons that she deserves a treat after this bad event and decides to buy her favorite chocolate bar. These and other examples of a phenomenon that has been coined “emotional eating” sound familiar because they are prominently present in the scientific literature and even in movies, popular books, and magazines: many people seem to agree that it is a proven fact that...
people overeat when they feel sad or angry or otherwise experience negative affect. The scientific literature on emotional eating has expanded in the past decades and focuses on laying out the conditions under which negative emotions lead to eating more than one wants to. The scientific literature also has witnessed several controversies such as whether only negative affect leads to overeating or that positive affect may influence eating behavior as well, or whether emotional eating is a phenomenon that is primarily observed in people who are concerned about their weight or have an otherwise problematic attitude toward eating.

In this chapter we review the literature on emotional eating and examine which emotions lead to (over)eating and the psychological underpinnings of this relation. In doing so, we pay particular attention to the type of affect (e.g., positive versus negative emotions; low arousal versus high arousal emotions) and the mechanisms that underlie the impact of affect on eating (e.g., coping, licensing). Before we turn to these classic topics in the literature on affect and eating, we take a slightly different angle and address questions that pertain to the relation between affect and eating from a different perspective, that is that eating is not only influenced by affect but also brings affect—either positive or negative. Indeed, complementing the abundant literature on negative emotions contributing to overeating, there is literature showing that eating (and even thinking about eating) has important consequences for how we feel. To better understand in what way negative or positive emotional states affect eating behavior, it is important to consider the flip side as well. After all, eating is a necessity and as such knowing more about how eating and affect influence each other bidirectionally may help to understand this complex relationship. For frequently repeated behaviors such as eating, which we all do on a daily basis, previous affective experiences with eating (affective consequences of eating) may have a direct impact on our affective expectations of eating (affective determinants). Thus, how we felt during previous eating occasions may in turn influence how these feelings determine subsequent behavior. Before we discuss the affective determinants of eating behavior in detail, we first review the literature on the affective consequences of eating behavior.
EATING BRINGS PLEASURE, OR DOESN'T IT?

To illustrate in what way affective determinants of eating are intertwined with its affective consequences, consider the following example. Many people nowadays experience considerable ambivalence when making food decisions, especially when these choices are about foods they like (which are unfortunately often unhealthy foods, containing large amounts of sugar, salt, and fat). Before even tasting the food, people anticipate how they will feel about eating the food. For most of us, eating decisions generate mixed feelings. On the one hand we expect to derive pleasure from eating while on the other hand we realize that we might feel guilty after indulging because of the negative consequences for health and weight. This anticipated conflict—enjoyment versus guilt—is rooted in previous affective experiences with eating, which are driven by both the biological rewarding properties of food and a social-cultural context that warns against eating too much.

Reward of Eating

One of the most pervasive accounts of overeating holds that people eat too much because of food’s rewarding value. Eating is a biological function that is crucial for survival and as such our genes have prepared us to enjoy eating (Pinel, Assanand, & Lehman, 2000). In particular foods high in fat and sweet are related to release of endorphins and result in enhanced positive affect (Benton & Donohoe, 1999), mostly within several hours after ingestion (Smith, Leekam, Ralph, & McNeill, 1988). While the affective bonus from eating was adaptive in the old days when food was scarce, in our modern society with high caloric food available any time, any place, this inherent pleasure people derive from eating has made us vulnerable, especially as we seem to enjoy eating even more when it concerns palatable foods that contain large amounts of sugar, salt, and fat (Berridge, 2000). These hedonic reactions to food are a robust phenomenon and have a biological basis: because we like food so much we are motivated to put effort...
into getting it (Berridge, 2000). Simply looking at food can evoke immediate appetitive responses in terms of salivation, blood pressure, and gastric activity (Nederkoorn, Smulders, & Jansen, 2000). As a result, even in these modern times many of our daily desires center around food. In an experience sampling study of German adults it was reported that no less than one-third of our longings during the day relates to food (28.1%), which is considerably more than the wish for sleep (10.3%), leisure (7.2%), social contact (7.1%), sex (4.6%), or spending (2.2%) (Hofmann, Baumeister, Förster, & Vohs, 2012).

Moralization of Eating

While the rewarding function of food has been extensively documented in the literature (mostly in terms of its biological significance for survival), the positive consequences of eating in terms of immediate positive affect or overall psychological well-being have largely been neglected so far in eating research (Rozin, 1999). It has been speculated that ignoring the pleasure of eating in food research may be a consequence of our preoccupation with healthy food, initiated by health professionals who have documented the detrimental effects of unhealthy food on health and weight, and widely adopted by consumers who have come to realize that eating too much brings health risks. The literature on eating and health (unintentionally) suggests that eating healthy foods is incompatible with enjoying food, with the result that many people think that eating healthily is not a fun activity. The “moralization of pleasure” in food research (Askegaard et al., 2014) has made healthy eating a virtue that requires a great deal of self-regulation to the extent that people have to forego (unhealthy) foods they like in order to stay slim and healthy in the long run. Even worse, Askegaard and colleagues (2014) argue, enjoying foods seems to signal indulgence and failure of self-regulation, with the result that pleasure derived from eating is a vice typical for people who cannot restrain their impulses for immediate satisfaction of their low-level visceral urges and only strive for short-lived hedonic relief. In an attempt to create a
more nuanced view of the role of pleasure in eating behavior, Cornil and Chandon (2016) recently proposed the concept of Epicurean eating, which they define as "the enduring pleasure derived from the aesthetic appreciation of the sensory and symbolic value of food." Different from the almost caricatural picture that enjoyment of eating is typical for people who indulge in big portions of fat food, they found that Epicurean eaters enjoy good food in small portions, slightly reminiscent of Paul Rozin's study of French consumers who eat small (rather than big) portions at the local McDonald's in Paris while having a good time with their friends (rather than worrying about their consumption) (Rozin, Kabnick, Pete, Fischler, & Shields, 2003). Exact numbers on the prevalence of Epicurean eating are lacking so far. It may well be that Epicurean eating, as proposed by Cornil and Chandon, is an atypical phenomenon that only applies to a small group of well-educated foodies who can afford to engage in what also has been labeled as mindful eating (Papies, Barsalou, & Custers, 2012). There are some indications, however, that Epicurean eating is a phenomenon that it is typical for food cultures that allow for the enjoyment of small bites, such as Mediterranean Europe (Rozin, 1999).

Culture and Pleasure of Food

Large cultural differences have been documented with regard to whether people primarily enjoy the experience of eating versus thinking about food in terms of health consequences (Rozin, Fischler, Imada, Sarubin, & Wrzesniewski, 1999). Americans tend to associate food most with health and the least with pleasure, while the opposite pattern is found in French and Belgian consumers (Rozin et al., 1999). Ironically, the Americans who do the most to alter their diet in the service of their health are the least likely to classify themselves as healthy eaters. Moreover, they tend to enjoy food the least while they eat the most. The most extreme differences in the Rozin et al. study were found between French male and American female students on typical items relating to food on the worry versus pleasure dimension, such as "Enjoying food is one of the most important
pleasures of my life" with the American female students scoring substantially lower than the French men. These findings seem to suggest that primarily thinking about food in terms of health ruins the pleasure of eating (at least, to the extent that healthy food is regarded as incompatible with good taste, see what follows). The apparent contradiction that people who value health the most are in fact unhealthy eaters, while people who enjoy food and even eat more unhealthy foods are healthier, has been associated with the French paradox. This paradox is derived from the observation that mortality rates from coronary heart disease are substantially lower among the French than Americans, yet the French have a higher blood cholesterol level (Renaud & de Lorgeril, 1992). Several explanations for this paradox have been suggested, such as genetically based metabolic differences between the French and the Americans or the French having a lower BMI (even though their diet contains more fat) (Rozin et al., 2003). One of the most appealing accounts seems to be that "food life" in France is less stressful because people have a more positive attitude toward food and are less bothered by worries about the health consequences of consuming particular foods, which eventually results in eating less with more fun (Rozin, 1999; Rozin et al., 1999).

DIETING AND PLEASURE

Whereas France and the United States may represent the extremes of positive versus negative attitudes to food, it seems that only very few people have an uncomplicated way of thinking about food nowadays. In fact, it seems that many people are slightly obsessed by the potential negative consequences of food for their health and weight while still craving for (unhealthy) foods, resulting in mixed feelings and ambivalence rather than straightforward negative feelings about food. The prototypical example is a study of American undergraduate students, showing that especially female students very much enjoyed eating but at the same time reported serious worries about the impact of food on weight and health (Rozin, Bauer, & Catanese, 2003). The most illustrative items that were
used in the survey reveal that many respondents associated chocolate cake with guilt rather than celebration and ice cream with fattening rather than delicious. Similar findings were reported in a large community survey in the Netherlands, that documented that many people—regardless of their age, gender, and education—were not so much negative about food but nevertheless reported considerable concerns about the impact of food on their weight and health (De Ridder, Adriaanse, Evers, & Verhoeven, 2014). Interestingly, more than 60% of the participants qualified as a dieter according to the sex-specific norms of the Dutch Eating Behavior Questionnaire (Van Strien, Frijters, Bergers, & Defares, 1986), and it was dieting status that was most strongly associated with concerns about food without having any impact whatsoever on how much people actually ate (snack consumption reported in a 1-week diary).

These findings clearly reveal an intriguing phenomenon in our modern society. While we still enjoy food (or are at least not very negative about it), we are also well aware of the potential negative consequences of food for health, especially in terms of the risks of overweight. The obesogenic environment has generated much information about the health risks of overweight with the objective to warn people to restrain their food intake. Being aware of the negative consequences of overeating is important to change eating behavior, but a negative side effect of the exposure to the ubiquitous and complex information about the diet–health link (Rozin, 1999) is that we need to pay constant attention to what and how much we eat. Many people (up to about 65% of the population) call themselves a dieter these days (Andreyeva, Long, Henderson, & Grode, 2010; De Ridder et al., 2014), which may be the direct result of having been bombarded with information about the negative health consequences of overeating. It is now generally agreed that the self-proclaimed dieter status has not so much to do with how much people actually eat (De Ridder et al., 2014; Stice, Cooper, Schoeller, Tappe, & Lowe, 2007). Rather, considering oneself a dieter seems to be an expression of concerns about the consequences of food for weight and health (Adriaanse, De Ridder, & Evers, 2011). Dieting has therefore been labeled as “double trouble,” because dieters do not eat less and still feel worse (De Witt Huberts, Evers, & De Ridder, 2013). The
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reason that there are so many dieters—that is, people who worry about their food intake without being able or willing to actually restrain it—may thus be a direct consequence of the public moralization of an unhealthy diet (Askegaard et al., 2014). Such moralization may instigate feelings of worry that serve as a means to decrease feelings of guilt about not having made sufficient effort to change one's eating behavior (De Ridder et al., 2014). Indeed, it has been reported that restraint status is associated with feelings of guilt that are unrelated to actual food intake but rather pertain to having transgressed one's personal standards (De Witt Huberts et al., 2013). Feelings of guilt about eating are incompatible with the enjoyment of food (Lindeman & Stark, 2000; Macht & Dettmer, 2006; Rozin, 1999), suggesting that restrained eating not only leads to a greater experience of guilt but also makes eating a less pleasurable experience.

Healthy Food and Taste

It thus seems that a greater emphasis on the potential negative consequences of food for health and weight has serious implications for the immediate experience of food in terms of pleasure. This is also manifest in studies that report on the influence of the labeling of food as “healthy” on sensory experiences in terms of taste. One study has shown that such labeling leads people to enjoy food less and even makes them hungry (Finkelstein & Fishbach, 2010). This study demonstrated that consumers who were asked to sample a food item framed as “healthy” later reported being hungrier and consumed more food than those who sampled the same item framed as tasty or those who did not eat at all (Finkelstein & Fishbach, 2010). Importantly, these effects of healthy eating depended on the consumer’s perception that healthy eating was mandatory; only imposed healthy eating made consumers hungrier, whereas freely choosing to eat healthy did not increase hunger. Whereas this study suggests that healthy food is perceived as less rewarding, the opposite has also been demonstrated, namely that unhealthy (i.e., high caloric) food is considered to be more rewarding (Kroese, Evers, & De Ridder, 2013; Raghunathan,
Naylor, & Hoyer, 2006) in spite of being perceived as "more dangerous" in terms of health consequences (Macht, Gerer, & Ellgring, 2003). In a series of experiments Raghunathan and colleagues (Raghunathan et al., 2006) found evidence that the less healthy a food item was portrayed, the better its inferred taste, the more it was enjoyed during actual consumption, and the greater the preference for it in a subsequent food choice task. These findings speak to the intuition that healthy food has a negative appeal because it is consumed for its assumed positive consequences for health rather than for the immediate enjoyable experience of food.

However, there are some limitations to this intuition, depending on the extent to which healthy food actually is considered untasty (Werle, Trendel, & Ardito, 2013) or is considered as part of one’s eating routines (Gillebaart, Schneider, & De Ridder, 2015). The typical association of healthy with untasty may only apply in a context where people perceive a conflict between their immediate need for palatable food and their wish for staying healthy and slim in the long term. This association has been observed in female American students who would like to diet and for whom fatty foods are a guilty pleasure. However, “healthy” and “tasty” are not inherently opposite to each other. In a French study, researchers found that unhealthy food (rather than healthy) was spontaneously associated with bad taste, whereas healthy food was linked to tastiness (Werle et al., 2013). This study also reported that the link between healthy food and tastiness was weaker in restrained (French) eaters, suggesting that dieting may be a potential explanation for the association between unhealthy and tasty (and thus forbidden) foods that seems more prominent in the American food culture (Werle et al., 2013).

Healthy food also is not necessarily associated with bad taste for people who consider “healthy” food as the obvious thing to do. This was shown in a study that demonstrated that people with high trait self-control who think of healthy food as part of their daily routine were not ambivalent at all about healthy foods and categorized them as straightforwardly positive (Gillebaart et al., 2015). The extent to which healthy food is associated with untasty (and unhealthy food with tasty) thus seems to depend on how people feel about healthy foods: when they consider healthy foods

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as the normal thing to do or simply like fruits and vegetables (which are healthy but not necessarily liked because they are healthy) they have no negative thoughts about these foods. In terms of promoting healthy food, it therefore may be worthwhile to avoid the label "healthy" because it communicates that this makes you give up on taste (as if it were a trade-off) and requires extra effort to invest in future benefits without immediate pleasure.

Summary

To sum up, whereas the biological function of eating implies that people derive pleasure from food, in rare cases it actually does nowadays. Instead, food has become a reason for concern. Many people are worrying about the diet–health link and ironically it seems that the more importance they attach to healthy eating the less they enjoy eating and the more they crave unhealthy food, which they consider tastier (while not actually eating less). This complicated association between food, health, and pleasure may also be one of the reasons why many people seem to turn to eating as a strategy to cope with negative emotions, which is one of the manifestations of emotional eating that we discuss in the next section.

NEGATIVE EMOTIONS LEAD TO OVEREATING, OR DON'T THEY?

For a long time negative emotions have been considered as important instigators of overeating (e.g., Bruch, 1964; Lehman & Rodin, 1989; Macht, 2008) and hence contributing to weight gain. The idea that negative emotions are responsible for overeating is rooted in psychosomatic theory (Bruch, 1964), stating that eating when experiencing negative emotions either results from the inability to distinguish hunger sensations from arousal due to other aversive internal states or results from having learned early on that eating is a means to alleviate negative emotional
states. Emotional eating, generally defined as eating in response to negative emotions rather than hunger (e.g., Van Strien et al., 1986), has been the topic of extensive theoretical debate. Before we discuss empirical findings on emotional eating, we first elaborate on these theoretical notions. To put it bluntly, the exact process by which emotions affect eating behavior has largely remained unclear (Leith & Baumeister, 1996). Negative emotions bring about a bodily state similar to satiety, as increased autonomic emotional activity leads to the release of appetite-inhibiting hormones and to a variety of gastric changes similar to those that are involved in satiety (Blair, Wing, & Wald, 1991). The tendency to overeat in response to negative emotions, then, is surprising from a biological point of view. Also from a functional perspective, emotional eating seems maladaptive. Emotions prepare the organism for a set of diverse actions required to respond optimally to environmental demands and eating interferes with these demands. Accordingly, from a functional perspective on the role of emotions in behavior, a natural response to negative emotions would consist of decreased eating (Schachter, Goldman, & Gordon, 1968), with overeating while being emotional a response that is typical for individuals with eating pathology (such as, for example, binge eating disorder) rather than a normal reaction in healthy individuals (e.g., Herman & Polivy, 1988; Masheb & Grilo, 2006; Wiser & Telch, 1999).

Explaining the Role of Negative Emotions

In order to explain the seemingly irrational tendency to overeat in emotional situations in healthy individuals, several psychological explanations have been put forward. One group of theories has assumed that increased eating in response to negative emotions occurs in order to cope with these negative feelings. For example, it has been postulated that binging occurs as an attempt to escape from negative self-awareness (Heatherton & Baumeister, 1991). When individuals are confronted with ego-threatening information, they shift their attention to the immediate stimulus environment and away from higher cognition levels. This allows them to avoid having to deal with narrowing of attentional scope.

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having to deal with the implications of the threatening information. Such narrowing of attention results in reduced inhibitory actions, creating a situation where individuals are likely to engage in increased eating.

Another frequently posited assumption is that overeating increases the experience of positive emotions (note that this assumption is different from what we discussed in the previous section on eating rather than overeating creating a pleasurable experience). This perspective states that individuals derive pleasure from the consumption of food because of its hedonic qualities (Lehman & Rodin, 1989). Several studies have found that a binging episode does indeed temporarily improve one's mood (e.g., Deaver, Mitenberger, Smyth, Meidinger, & Crosby, 2003), but there are also accounts suggesting that overeating in fact only further increases negative mood (Macht & Dettmer, 2006; De Witt Huberts et al., 2013).

A third explanation for the role of negative emotions in overeating is the so-called masking theory, stating that overeating is an attempt to misattribute perceived stress to eating, so as to distract from the original source of distress (Herman & Polivy, 1988). These different accounts of negative emotions leading to overeating share the assumption that before overeating occurs, individuals experience negative feelings that they cannot regulate properly, prompting them to employ a strategy they do have access to, but that is highly maladaptive in the long run, that is, overeating (Evers, Stok, & de Ridder, 2010).

Emotional Eating and Deting

Another group of theories has focused particularly on restrained eaters and posits that emotional eating in terms of overeating in response to negative emotions is only present in people who are trying to limit their food intake (Greeno & Wing, 1994). As we argued in the previous section, dietary restraint, defined as the intentional attempt to restrict caloric intake for the purpose of weight loss or weight maintenance (Herman & Mack, 1975), does not necessarily mean that actual caloric intake is restricted. Research has revealed that, in the long term, restrained eaters
often fail in reaching their weight maintenance or weight loss goal (Stice, Presnell, Shaw, & Rohde, 2005; Stice et al., 2007). One of the reasons that many dieters are not able to lose weight is that they respond to (prolonged) restraint with disinhibited eating. Emotional distress is regarded as one of the typical triggers for disinhibition in restrained eaters, as the experience of distress imposes a more pressing concern than adhering to self-imposed dietary rules (Polivy, Herman, & McFarlane, 1994). Alternatively, it has also been theorized that the processing of emotionally distressing stimuli requires attention, which then is no longer available for cognitive control of one’s diet because cognitive capacity is limited. This implies that restrained eaters are more prone to increase their food intake when negative emotions arise (Boon, Stroebe, Schut, & Jansen, 1998).

**Negative Emotions and Eating: Empirical Findings**

In contrast with the wide variety of theoretical accounts of why negative emotions would lead to overeating—either as a means to cope with negative emotions or otherwise—the actual empirical evidence that negative emotions lead to overeating is mixed, to say the least. In fact, a systematic review of experimental studies in “normal eaters”—that is, individuals with a normal weight and low scores on emotional and restrained eating—revealed that negative emotions can result in both decreased and increased eating (Macht, 2008). In this review of 25 studies, less than half of the studies (10) provided evidence of negative emotions leading to increased eating while one-third (7) suggested decreased eating and another one-third (8) articles pointed toward negative emotions not affecting eating behavior at all. Taken together, there is very limited evidence that negative emotions lead to overeating in normal eaters.

The same holds for restrained eaters. Studies that have examined the assumption that specifically restrained eaters are vulnerable to emotional eating have produced diverse findings. Greeno and Wing’s (1994) classic systematic review supports the idea that restrained eating is the best predictor for increased eating in response to negative emotions. Their review
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reports that the eating patterns of unrestrained eaters and normal-weight individuals as well as obese individual, in contrast with those of restrained eaters, were unaffected by negative emotions. However, 20 years have passed since this review, and the role of restrained eating in emotional eating has been the topic of many additional studies since that time. Some studies have found support for the idea that typically restrained eaters overeat in response to negative emotions (e.g., Yeomans & Coughlan, 2009), but other studies did not replicate this finding (e.g., Oliver, Wardle, & Gibson, 2000). Consequently, it has been argued that restraint status is not a predictor of emotional eating (Spoor, Bekker, Van Strien, & Van Heck, 2007; Williams et al., 2002).

Emotion Regulation and Eating

As it is has proven difficult to predict when negative emotions result in emotional eating and in whom, it has been argued that it may not necessarily be the emotion itself that elicits overeating, but rather the manner in which the emotion is dealt with. That is, individuals who experience negative affect they cannot regulate properly, may be prone to turning to the maladaptive strategy of overeating. This line of reasoning has important implications, because it suggests that the problem is not necessarily related to the experience of negative emotions per se, but rather to the absence of adaptive emotion regulation strategies for dealing with negative affect. In our lab we have addressed this hypothesis in several studies and we specifically investigated how different emotion regulation strategies affect eating behavior.

In a series of experiments (Evers et al., 2010), participants were led to believe that they participated in two unrelated studies. In the so-called first study, negative emotions were induced, followed by a "second" study consisting of bogus taste test, actually meant to assess caloric intake. In the first experiment, focused on individual differences in reappraisal and suppression, sadness was induced by autobiographical recall contrasted against a control condition where participants had to recall an unemotional
daily event. The taste test included comfort foods, pleasurable foods high in caloric content and palatability, such as chocolate and cookies. Results revealed that individuals regularly using suppression in their daily lives, indicating that they do not express their emotions, consumed more food when being emotional than individuals rarely using this strategy.

In two follow-up experiments, reappraisal and suppression were manipulated and contrasted against a spontaneous expression condition without any regulation instructions. Negative emotion was induced by a film excerpt and the so-called taste included both comfort and noncomfort foods, the latter being low in caloric value and palatability. Differences in food intake were especially expected for comfort foods, since these are the food types commonly expected to alleviate one's feelings (Lebel, Lu, & Dubé, 2008). Findings revealed that participants who were instructed to suppress their emotions ate more comfort foods compared to participants who were instructed to reappraise these emotions and compared to participants who were allowed to express their emotions spontaneously. The reappraisal and control condition did not differ in food consumption. Importantly, emotions per se did not affect food intake, which indicates that applying the maladaptive emotion regulation strategy of suppression was responsible for higher intake. These findings have been replicated in other studies with healthy, unrestrained eaters (Taut, Renner, & Baban, 2012) and restrained eaters (Svaldi, Tuschen-Caffier, Lackner, Zimmermann, & Naumann, 2012).

In line with these findings, Taut and colleagues (2012) observed that reappraisal, an adaptive emotion regulation strategy that has been shown to decrease negative feelings, can also prevent emotional eating from occurring. Reappraisal refers to cognitively reframing the emotional situation so as to decrease its emotional impact. To assess eating behavior, Taut et al. used a nonforced free-eating setting, meaning that participants themselves could choose whether and how much they ate. This setting allowed for an analysis of whether or not eating was used to regulate emotions, in addition to an analysis of whether the amount of food that was consumed differed by emotion regulation strategies. Findings showed that about two-thirds of the participants in the control condition and the

Affective Determinants of Eating suppression condition to reappraisal group did. However, the way we deal with emotional eating when being emotional regulation strategies can be responsible for increased eating when being emotional regulation strategies can be responsible for increased eating when being emotional.

Positive Emotions and

The role of negative emotions as a research, as can be inferred from the role of positive emotions as a topic of research until and in the field makes important triggers for increased eating. Nederkoorn, 2013; Eva & Schwarzer, 2010; sense that positive emotions accompany increased eating. Many cultures all over the world have important events accompanied by high positive emotions and an example via an associative eating. Another reason why related to studies showing that eating is a positive me
suppression condition turned to eating, while only one-third of the reappraisal group did. However, when participants in the reappraisal condition started to eat, they consumed as much as participants in the other conditions. These results suggest not only that maladaptive emotion regulation strategies can be responsible for emotional eating but also that adaptive emotion regulation strategies such as reappraisal decrease the likelihood of eating when being emotional. All in all, the findings on the role of emotion regulation strategies in overeating strongly support the notion that the way we deal with our emotions in daily life may be more relevant to explain emotional eating than the negative emotion itself.

Positive Emotions and Eating

The role of negative emotions in overeating has been the topic of much research, as can be inferred from the studies cited above. In contrast, the role of positive emotions as a potential cause of overeating has not been a topic of research until recently. A number of recent studies both in the lab and in the field make a strong case that positive emotions may be important triggers for increased eating (Bongers, Jansen, Havermans, Roefs & Nederkoorn, 2013; Evers, Adriaanse, De Ridder, & De Witt Huberts, 2013).

Although some studies could not find evidence for positive emotions being associated with overeating (e.g., Turner, Luszczynska, Warner, & Schwarzer, 2010; Yeomans & Coughlan, 2009), it makes theoretical sense that positive emotions, rather than negative emotions, are a trigger of increased eating. As suggested by the seminal work of Paul Rozin, in many cultures all over the world food plays an important role in celebrating important events such as weddings and birthdays that are generally accompanied by high levels of positive emotions (Rozin, 1999). As a result, positive emotions and eating may have become inherently interrelated, for example via an associative learning mechanism (Patel & Schlundt, 2001). Another reason why positive emotions may trigger increased eating is related to studies showing that people typically enjoy eating hedonic foods when in a positive mood (Macht, Roth, & Eligring, 2002). The intention to
eat is higher during joy than during sadness (Macht, 1999), and chocolate is considered most pleasant when experiencing positive emotions (Macht et al., 2002). Consequently, positive emotions may increase the pleasure of eating and result in increased consumption.

Currently, emotional eating is typically defined as increased eating in response to negative emotions (Arnow, Kenardy, & Agras, 1995; Van Strien et al., 1986), which is related to the origin of the emotional eating concept in psychosomatic theory (Bruch, 1964). The three most widely used emotional eater scales, measuring whether individuals perceive themselves as emotional eaters based on self-reports, are restricted to negative emotional states (EES by Arnow et al., 1995; TFEQ by Stunkard & Messick, 1985; DEBQ by Van Strien et al., 1986). More recently however, new initiatives for emotional eater scales have been developed with the inclusion of positive emotional states as well. For example, the Emotional Overeating Questionnaire (EOQ: Masheb & Grilo, 2006) was specifically developed for overweight patients with binge eating disorders and also includes a happiness subscale; the Emotional Appetite Questionnaire (EMAQ: Nolan, Halperin, & Geliebter, 2010) includes both positive and negative emotions; the EES has been modified into a version with several positive emotions such as happiness and enthusiasm (EES-II: Kenardy, Butler, Carter, & Moor, 2003). Although these newer emotional eater scales have not yet been validated, they provide at least a more complete reflection of the phenomenon of emotional eating.

Implicit Assessment of Emotional Eating

In the past years some controversy has risen about the validity of self-report questionnaires asking individuals to identify themselves as an emotional eater (Adriaanse et al., 2011; Evers, de Ridder & Adriaanse, 2009; Bongers, Jansen, Havermans, et al., 2013). Controversy not only relates to the inclusion of other affective states than negative emotions but also to the relevance of self-report as an adequate means to assess emotional eating. Evers et al. (2009) noted a potential triple bias in using self-reports for assessment: they were undertaken at the time of assessment. As an example: Houben Associations are stronger the idea that we often overeat after eating on Association that it is rather a reflection of the phenomenon of emotional eating.

Emotion...
for assessing emotional eating: people should be able to assess whether they were emotional at a specific occasion, whether and how much they ate at that moment, and whether there was an association between both—all these assessments are subject to severe bias of retrospective memory. As an alternative for self-report of emotional eating, Bongers, Jansen, Houben, and Roefs (2013) have proposed using a Single Target Implicit Association Test to measure the strength of associations between emotions and food concepts, based on the idea that emotional eaters show stronger associations between emotions and food concepts. In line with the idea that particularly positive emotions may be important triggers of overeating, the study revealed that participants with strong emotion-food associations consumed more during a positive emotion induction than during a negative emotion induction. Interestingly, only the IAT focused on associations between positive emotion and food had predictive value for eating under emotional load. Although speculative, this may indicate that it is easier to assess individual differences in positive emotional eaters rather than negative emotional eaters, as positive emotions may be more consistent in triggering increased eating than negative emotions.

Emotions as Justifications for Overeating

The suggestion of the studies presented earlier that particularly positive emotions may lead to eating more than one wants, is remarkable in view of the conventional idea that emotional distress is responsible for undesired behavior. Emotional distress is often portrayed as an impulsive force that undermines people’s attempts at effective goal pursuit (such as eating healthily). However, a recent line of research suggests that long-term goals are sometimes deliberately violated when the context justifies doing so, a phenomenon labeled self-licensing (De Witt Huberts, Evers, & De Ridder, 2014; Kivetz & Zheng, 2006). Self-licensing is the act of making excuses for one’s discrepant behavior before actual enactment, such that the forthcoming failure is made acceptable for oneself (De Witt Huberts et al., 2014). This novel perspective on self-regulation failure provides an
additional but underresearched explanation for the self-defeating influence of emotions on (eating) behavior. Instead of emotions as impulsive forces, the self-licensing literature stipulates that emotions may be used as a justification for engaging in overeating. Typical justifications for overeating often relate to emotional states, such as “Because I am sad, I deserve chocolate,” or “Because I am happy, I am allowed to take a cookie.” Given the idea that particularly positive emotions may trigger increased eating, it may well be that positive emotional justifications are more often used as a license to eat than negative emotional justifications. Future research however, is needed to assess if such speculations have empirical merit.

Summary

The literature on emotional eating has examined to what extent affect influences eating behavior and has typically examined the role of negative emotions in overeating. In contrast with theoretical notions about emotional eating stating firmly that negative emotions should lead to increased consumption, empirical findings do not support that claim. In recent years it has become clear that the role of affect in eating behavior is more complex than previously assumed, with mixed evidence at best for the notion that negative emotions lead to increased eating and a more prominent role for positive emotions. In addition, the validity of self-report scales for assessing emotional eating has been questioned. Promising perspectives on the role of affect in eating behavior relate to the role of emotion regulation strategies and justifications as explanations for the observation that emotions and eating behavior seem so closely related. It should be noted that most studies on emotional eating so far have examined single emotional encounters without paying attention to the temporal dynamics of how affect and eating are interrelated. It has been suggested that emotional eaters may be better capable of balancing their eating behavior than hitherto assumed, and compensate for increased consumption during emotional distress by eating less in positive emotional encounters
(Sproesser, Schupp, & Renner, 2013). Future research should therefore consider emotional eating over time to account for the dynamics of consumption across situations.

OVERALL SUMMARY

In this chapter we have examined the role of affect in eating behavior from two perspectives: the dominant perspective that investigates how negative emotions may lead to overeating and as such is to blame for overweight, and a slightly less well known perspective examining how eating may lead to the experience of negative or positive affect. Taken together, both perspectives have more in common than one would expect. In the first part of this chapter it became clear that eating more often leads to negative affect than one would assume, especially insofar as people are preoccupied with the potential negative consequences of eating for their health and weight. The second part of this chapter shows that negative emotions do not necessarily result in overeating (different from what is generally assumed) unless people abuse emotions for overeating, either because they have poor emotion regulation strategies or because they use emotions as justifications for overeating—but primarily if they have a complicated relation with food in terms of dieting or otherwise trying to regulate their food intake. It thus seems that the once inherent pleasurable activity of eating has become quite complex in modern times where for many people eating is a cause of concern about health and overweight rather than simply enjoying good food. It remains to be seen whether a more positive view of eating as propagated by the new concept of Epicurean eating (Cornil & Chandon, 2016) can curb this trend.

REFERENCES

Affective Determinants of Eating Behavior


