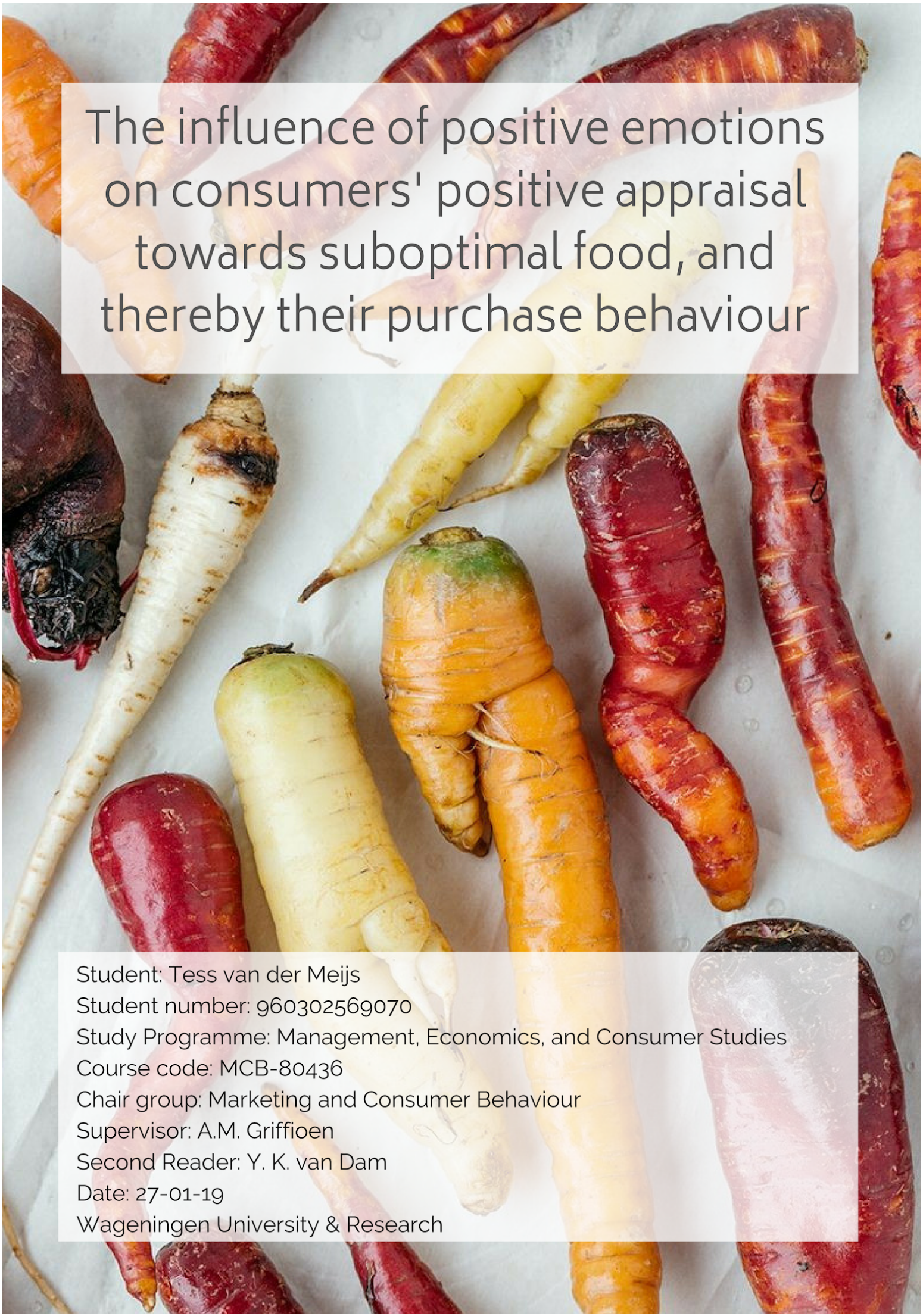

The influence of positive emotions on consumers' positive appraisal towards suboptimal food, and thereby their purchase behaviour

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Abstract

A large amount of the produced food that is wasted throughout the supply chain is thrown away in the retail and home stage by consumers. One group of wasted food is suboptimal food, which deviates from optimal food in the visual sense (e.g., the colour, the shape, and the physical damage). Consumers are likely to perceive suboptimal food as unsafe, unattractive or unpalatable to eat, and as lacking good sensory properties. This has consequences for consumers' appraisal towards suboptimal food, and in the end their purchase behaviour. Therefore, it was suggested that the influence of positive emotions, which broadens people's momentary thought-action repertoires, could help to develop a positive appraisal towards suboptimal food and thereby positively influence the purchase behaviour of suboptimal food. In this research, 255 participants, who were randomly assigned to a 2 (type of emotional influence: endogenous vs. exogenous) X 2 (arousal: high vs. low) + 1 control condition between-subjects design, filled in an online survey about suboptimal carrots and had to choose between an optimal and suboptimal carrot. The findings showed that feeling excited (high arousal) about a non-food related situation (exogenous) resulted in the highest purchase of suboptimal carrots. Moreover, once a positive appraisal towards suboptimal carrots was formed, a positive purchase behaviour was the end result. The implications of these findings will be discussed in both theoretical and practical terms, just like the limitations and directions for future research.

Keywords: suboptimal food, positive emotions, Broaden-and-Build Theory of Positive Emotions, positive appraisal, purchase behaviour

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Introduction

In 2013, 1.3 billion tonnes of our produced food were wasted throughout the supply chain (FAO, 2013). This waste has not only environmental, but also economic and social consequences on the sustainability of the food sector (Alexander et al., 2017; Buzby & Hyman, 2012; Gjerres & Gaiani, 2013). For example, the food sector is responsible for approximately one third of the greenhouse gas emissions (Garnett, 2011; Rockström et al., 2009). In addition, the production of food requires a huge amount of water, energy, land, and other natural resources (FAO, 2013; Godfray et al., 2010). Reduction of the amount of food waste is necessary to secure the sustainability of the food sector, for example to prevent the depletion of natural resources and to overcome the challenge to feed the growing world population (Foley et al., 2011; Godfray et al., 2010).

While food waste occurs in the agricultural stage of the supply chain in developing countries, it occurs mostly in the food service, retail and home stages in developed countries (FAO, 2013; Godfray et al., 2010). In the latter two stages, consumers play a crucial role in wasting food (Aschemann-Witzel, de Hooge, Amani, Bech-Larsen & Oostindjer, 2015). Not only do consumers waste around 110 kg of food per person per year (FAO, 2013) directly via household and in-store choices (Aschemann-Witzel et al., 2015). Consumers also waste food indirectly, as retailers assume that consumers do not wish to buy and consume food that does not meet the aesthetic standards, or also called suboptimal food (Aschemann-Witzel et al., 2015; Buzby, Hyman, Steward & Wells, 2011). Therefore, suboptimal food, like curly cucumbers and two-legged carrots, are thrown away at different supply chain levels before they even reach the store.

When consumers are in the store, the extrinsic aspects of food (the colour, the shape, and the physical damage) (Loebnitz, Schuitema & Grunert, 2015) activate the consumer's product category knowledge (Campbell & Goodstein, 2001). Since products that are congruent

with the product category knowledge are preferred by consumers (Mervis & Rosch, 1981), it is likely that the suboptimal food, with a different colour or shape, will not be chosen by consumers. This occurs even though such deviation does not have to change the intrinsic quality (Aschemann-Witzel et al., 2015; Gobel, Langen, Blumenthal, Teitscheid & Ritter, 2015). Suboptimal food is thus thrown away even when the intrinsic quality can be guaranteed. Through their food perception and food purchase behaviour of suboptimal foods, consumers thus influence the food waste across the supply chain of suboptimal food.

Consumers' perception of suboptimal food as incongruent with their existing product category knowledge has likely caused a negative assessment or appraisal about suboptimal food. As a result, consumers' attitude, which is the evaluation or appraisal towards an object, (Ajzen, 1991; Fishbein & Ajzen, 1975) in this case towards suboptimal food, will be negative. This attitude affects consumers' purchase intention and their purchase behaviour (Ajzen & Fishbein 1980; Ajzen, 1991). Therefore, in order to create the intention and the behaviour to buy suboptimal food, a positive appraisal towards suboptimal food needs to be formed.

Forming a positive appraisal towards suboptimal food could be established with the influence of positive emotions. Both positive and negative emotions can be either endogenous, having a direct link with the situation, or exogenous, having no direct link with the situation (Zeelenberg & Pieters, 2006), and can vary in levels of arousal (Bagozzi, 1996). In contradiction to negative emotions, positive emotions broaden attention, cognition and action (Fredrickson, 1998; Fredrickson & Branigan, 2001). Positive emotions also carry long-term adaptive benefits by building enduring personal resources that can be drawn on in later moments and in different emotional states (Fredrickson, 2001). Therefore, it is possible that when consumers would briefly experience positive endogenous or exogenous emotions, before they come in contact with suboptimal food, a positive appraisal towards suboptimal food might be formed. In addition, arousal is part of emotions (Schnachter & Singer, 1962). Arousal

indirectly influences the decision-making (Darden & Babin, 1994), and the behaviour of an individual (Bagozzi, Gopinath & Nyer, 1999). Therefore, the process of influencing consumers' appraisal towards suboptimal food with the influence of positive emotions might be moderated by the level of arousal.

The current research aims to investigate whether consumers' appraisal of suboptimal food can be positively influenced by positive emotions, moderated by arousal. When a positive appraisal is formed, it is assumed that consumers can create the same tendency to choose the suboptimal food as they would for choosing the optimal food; their product category knowledge is broadened. Thus, making consumers experience positive emotions before they enter the store, could change their appraisal towards suboptimal food and could develop the intention to buy the food. With the current research, the following research question and sub questions will be answered:

"Do positive emotions influence consumers' appraisal of suboptimal food, and thereby positively influence the purchase behaviour of suboptimal food?"

- What is the influence of positive emotions on consumers' appraisal of suboptimal food?
- What is the influence of positive consumers' appraisal on consumers' purchase behaviour of suboptimal food?
- What is the influence of arousal on the relation between positive emotions and the positive appraisal towards suboptimal food?

When consumers are more willing to buy suboptimal food, the sales of suboptimal food might be increased. This could create opportunities for retailers to sell more suboptimal food, instead of throwing it away. As a result, the production of food can be decreased, and the amount of (suboptimal) food waste will be reduced. These effects will contribute positively to the sustainability of the food sector.

The results of the current research extend the existing literature in the field of psychology and marketing, by using literature about positive emotions to change consumers' appraisal. The influence of positive emotions to change consumers' appraisal of suboptimal food has not been examined yet and is a valuable contribution to the research for motivators for consumers' purchase of suboptimal food. Results can be used in other studies that want to change people's appraisal with the influence of positive emotions.

Literature review

Food waste

The concept of food waste has been a frequent topic for the past couple of years (Aschemann-Witzel et al., 2015). Food waste can be defined as: "... any food, and inedible parts of food, removed from the food supply chain to be recovered or disposed (including composted, crops ploughed in/not harvested, anaerobic digestion, bio-energy production, co-generation, incineration, disposal to sewer, landfill or discarded to sea)" (Fusion, 2014, p. 6). Even though a certain amount of food waste is necessary to secure food supply (Papargyropoulou, Lozano, Steinberger, Wright & Ujang, 2014), food waste has consequences for the environment, society, and economy (Alexander et al., 2017; Buzby & Hyman, 2012; Gjerres & Gaiani, 2013). Some of these consequences are the depletion of natural resources, the challenge to feed the growing world population (Foley et al., 2011; Godfray et al., 2010), and the emission of greenhouse gasses (Garnett, 2011; Rockström et al., 2009).

Food waste among consumers occurs in the retail and home stage (Aschemann-Witzel et al., 2015). In these stages, the amount of food waste is influenced by factors that can be accommodated in three groups: societal, immediate (Aschemann-Witzel, 2016), and individual factors (Quested, Marsh, Stunell & Parry, 2013). Examples of societal factors are the economic situation, technological innovation, and food legislation (Aschemann-Witzel, 2016). Immediate factors are, for example, product and packaging characteristics, and retailer marketing strategies (Aschemann-Witzel, 2016). Examples of individual factors are demographics, values, culture, habits, emotions, motivation, and skills in food provisioning and handling (Quested et al., 2013). In the habits and routines of consumers, the socially-determined practices in food and eating, and the contextual factors are embedded (Evans, 2011; 2012). Even if consumers want to avoid food waste, they routinely prepare more food than needed in order to provide enough food for their household (Evans, 2012; Graham-Rowe, Jessop, & Sparks, 2014), or to satisfy

all the household members' wishes and tastes (Graham-Rowe et al., 2014). In addition, consumers are more concerned with the safety for themselves and others than with food waste avoidance (Aschemann-Witzel et al., 2015), so when the safety of the food can be questioned, consumers will throw away the food. Thus, several factors need be taken into account when food waste avoidance behaviour needs to increase.

One group of food that is wasted on the retail and home level is suboptimal food (Aschemann-Witzel et al., 2015). Suboptimal food is the largest group of the total food that is wasted (Aschemann-Witzel et al., 2015). It can be defined as:

> foods that consumers perceive as relatively undesirable as compared to otherwise similar foods because they either: (1) are close to, at or beyond the best-before date; or (2) deviate (visually or in other sensory perception) from what is regarded as optimal (usually equal to what is perceived as 'normal') (Aschemann-Witzel et al., 2015, p. 6458-6459).

In the current research, the focus is only on suboptimal food in the visual sense, and not in other sensory perceptions, like smell (olfaction) or touch (somatosensation), or on suboptimal food that is close to, at or beyond the best-before date. The concept of suboptimal food in the visual sense is chosen, since only the extrinsic aspects (e.g., the colour, the shape, and the physical damage) deviate from optimal food; the intrinsic aspects (e.g., taste, and nutritional values) are the same. Moreover, vegetables are chosen as the type of suboptimal food in the visual sense, since their deviation is caused by nature and not by human hand, like with broken cookies.

Suboptimal food, such as two-legged carrots, are thus thrown away because of their extrinsic aspects. One possible explanation for this is the alienation consumers have from the

food production. There is a large distance between production and consumption in terms of the supply chain (Loebnitz & Grunert, 2018), and therefore consumers do not see, for example, the process of growing vegetables and fruit. Since the optimal food is presented in stores (Loebnitz & Grunert, 2018), consumers create their product category knowledge based on the extrinsic aspects of the optimal food that are presented in the store (Campbell & Goodstein, 2001). When they see the suboptimal food, consumers compare the food with the existing product category knowledge that is stored in their memory (Bloch, 1995; Meyers-Levy & Tybout, 1989). The product category knowledge in individuals' memory is based on cognitive responses (Bloch, 1995), product beliefs (Schoormans & Robben, 1997), and on food choices and judgments through heuristics (Fischer & De Vries, 2008; Scheibehenne, Todd, & Wansink, 2010). Since suboptimal food deviates from optimal food in terms of extrinsic aspects, and thus deviates from consumers' expectations stored in their memory, consumers will experience suboptimal food as incongruent compared to optimal food (Maoz & Tybout, 2002). Therefore, consumers more likely perceive suboptimal food as unsafe, unattractive or unpalatable to eat, and as lacking good sensory properties (de Hooge et al., 2017). This has consequences for the acceptance of suboptimal food, since consumers perceive safety as more important than food waste avoidance (Aschemann-Witzel et al., 2015), experience it as undesirable to serve unattractive food to guests, and find the use of food with bad sensory properties sometimes unpractical (Siddiqua, 2016). Therefore, it looks like consumers have formed a negative appraisal towards suboptimal food that influences their buying behaviour to not buying suboptimal food.

Appraisals are "conscious or unconscious evaluative judgments of internal or situational conditions relating to an individual's concerns" (Schnebelen & Bruhn, 2017, p. 103). An individual's concern is everything someone cares about (Frankfurt, 1998), and includes the needs, attachments, goals, beliefs, and values (Frijda, 2007; Lazarus, 1991; Scherer, 2004). An

appraisal is transactional, which means that there is an interaction between the situation and the individual, and between the actual and desired state of the individual (Lazarus, 1991; Moors, Ellsworth, Scherer, & Frijda, 2013). An example of an appraisal is an individual's (un)conscious evaluative judgement about suboptimal food. To form a positive appraisal towards suboptimal food, it is suggested that consumers' product category knowledge needs to be broadened such that suboptimal food does not deviate from the product category knowledge anymore. The current research suggests that the formation of a positive appraisal towards suboptimal food could be achieved with the influence of positive emotions.

Emotions

Emotions play a central role in the behaviour of consumers (Bagozzi, Gopinath & Nyer, 1999). A definition of the concept of emotions varies among researchers (Fredrickson, 2001). In the current research, the working definition of Bagozzi, et al. (1999) is used. This definition is similar to the ones of Lazarus (1991) and Oatley (1992). Bagozzi, et al. (1999) define emotions as:

> mental states of readiness that arise from appraisals of events or one's own thoughts; has a phenomenological tone; is accompanied by physiological processes; is often expressed physically (e.g., in gestures, posture, facial features); and may result in specific actions to affirm or cope with the emotion, depending on its nature and meaning for the person having it. (p. 184).

Emotions are about personally meaningful circumstances (Oatley & Jenkins, 1996; Russell & Feldman Barrett, 1999), they are brief and short (Ekman, 1994; Russell & Feldman Barrett, 1999), and they fit into discrete categories, like fear and joy (Russell & Feldman

Barrett, 1999). This differs from terms like affect and mood. Affects are, in contrast to emotions, objectless or free-floating (Oatley & Jenkins, 1996; Russell & Feldman Barrett, 1999), long-lasting (Ekman, 1994; Russell & Feldman Barrett, 1999), and vary along two dimensions; pleasantness and activation (Russell & Feldman Barrett, 1999), and positive and negative (valence) (Tellegen, Walson, & Clark, 1999). Moods are also long lasting, have a lower intensity than emotions (Bagozzi et al., 1999), are nonintentional or global (Frijda, 1993), and are not directly linked with action tendencies and actions as emotions (Bagozzi et al., 1999).

Action tendencies are linked to the function of an emotion (Frijda, 1986; Frijda, Kuipers, & Schure, 1989; Lazarus, 1991; Levenson, 1994; Oatley & Jenkins, 1996; Tooby & Cosmides, 1990), like anger with the urge to attack (Fredrickson, 2001). In other words, action tendencies are the tendencies to perform a certain behaviour (Frijda, 1986). With the use of action tendencies, individuals narrow the set of behavioural options they have when they think about possible courses of action (Fredrickson, 2001). This makes emotions evolutionarily adaptive: they work best in surviving life-or-death situations (Tooby & Cosmides, 1990), since it allows for individuals to act quick (Fredrickson, 2001). In addition, action tendencies go hand in hand with physiological changes (Levenson, 1994). When an individual experiences a specific emotion, an adequate physiological reaction will follow (Levenson, 1994), like making a fist when an individual experiences anger. The action tendencies of negative emotions, like anger, are easy to specify (Fredrickson, 2001), since they signal a specific problem (Zeelenberg, Nelissen, Breugelmans & Pieters, 2008). However, this does not apply to the action tendencies of positive emotions, like joy: the action tendencies of positive emotions are formulated too general (Fredrickson & Levenson, 1998), so it does not become clear which action tendency is specific for that positive emotion, and they are not well examined yet. Therefore, more research on action tendencies following from a positive emotion is needed in order to specify these action tendencies. The current research examines the action tendencies following from a specific

positive emotion and the influence of this action tendency on consumers' appraisal of suboptimal food.

The Broaden-and-Build Theory of Positive Emotions by Fredrickson (2001) is developed to understand the effect of positive emotions. This theory states that

> certain discrete positive emotions—including joy, interest, contentment, pride, and love—although phenomenologically distinct, all share the ability to broaden people's momentary thought-action repertoires and build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources." (Fredrickson, 2001, p. 3).

This is in contrast to negative emotions, which narrow the momentary thought-action repertoires (Fredrickson, 1998; Fredrickson & Branigan, 2001). Momentary thought-action repertoires are, like action tendencies, linked to the tendency to perform a certain behaviour (Fredrickson, 2001). Through positive emotions, the array of individuals' thoughts and actions are widened (Fredrickson, 1998; Fredrickson & Branigan, 2001) in social, physical, intellectual, and artistic behaviour (Ellsworth & Smith, 1988; Frijda, 1986). As a result, individuals will experience the urge to explore, to take in new information and experiences, and to expand the self in the process (Csikszentmihalyi, 1990; Izard, 1977; Ryan & Deci, 2000). Examples of positive emotions are excitement, alertness, happiness, contentment, calmness, and relaxation (Russel, 1980; Russel & Lanius, 1984). Thus, the experience of positive emotions broadens the habitual modes of thoughts and behaviour (Fredrickson, 1998; Fredrickson & Branigan, 2001). Moreover, the broaden effect of positive emotions carries the indirect and long-term benefit of enduring personal resources, so that they can be used in different moments, like to manage future threats, and in different emotional states (Fredrickson, 2001). Therefore, it is likely to

assume that when consumers experience positive emotions, such as excitement and relaxation, before they come into contact with suboptimal food, they will experience the urge to explore the suboptimal food. Through exploring suboptimal food, the current research suggests that consumers might form of a positive appraisal towards suboptimal food.

Since positive emotions broaden the momentary thought-action repertoires, and negative emotions narrow them (Fredrickson, 1998; Fredrickson, 2001), positive emotions might correct or undo the narrowing effect of negative emotions (Fredrickson & Levenson, 1998). This narrowing effect is captured in the undoing hypothesis (Fredrickson & Levenson, 1998). The undoing hypothesis states that when the momentary thought-action repertoires are broadened with the influence of positive emotions, the positive emotions may ease the hold of the negative emotions on an individual's mind and body by dismantling the preparation for a specific action (Fredrickson, 2001). In other words, an individual places an event in a broader context after experiencing positive emotions, whereby the change of repetition of the negative event decreases (Fredrickson, 2001). As a result, individuals improve their psychological well-being (Fredrickson, 2001). Thus, when consumers experience positive emotions a brief moment before they come into contact with suboptimal food, it is likely to assume that they could broaden their momentary thought-action repertoires. The current research presumes that broadened momentary thought-action repertoires lead, among others, to the urge to explore new products, and that could lead to the formation of a positive appraisal towards suboptimal food. It also looks like that consumers develop a more positive appraisal towards suboptimal food when consumers experience positive emotions compared to when they do not experience positive emotions. This is because their habitual modes of behaviour, which is buying the optimal food, might be broadened to buying suboptimal food with the influence of positive emotions, but will remain the same with the absence of positive emotions. In the current research, positive emotions that are deliberately evoked are referred to as 'positive emotions',

and the absence of these emotions is referred to as 'no emotions'. Thus, no emotions include the possibility that individuals already experience positive emotions, but these emotions are not deliberately evoked. The current research proposes that:

> *Hypothesis 1a*: The experience of positive emotions a brief moment before consumers come into contact with suboptimal food will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to the experience of no emotions.

Endogenous and exogenous emotions

Emotions have an impact on the decision making of individuals, since they can influence how an individual evaluates the outcome of the decision (Zeelenberg et al., 2008). The emotional influence on individuals can be either endogenous or exogenous (Zeelenberg & Pieters, 2006; Zeelenberg et al., 2008). Endogenous means that the emotion is relevant for the decision itself (Zeelenberg & Pieters, 2006), and is part of the goal setting and goal striving process (Zeelenberg et al., 2008). This is related to integral emotions, which have a direct link to something in the immediate situation (Loewenstein & Lerner, 2003). In relation to buying suboptimal food, endogenous emotions seem to be part of the goal of buying food, which is consumption, and related to the decision whether to buy the suboptimal food for consumption. In combination with the hypothesis that positive emotions in general will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to no emotions (Hypothesis 1a), it is likely to assume that the experience of endogenous positive emotions will also have a larger influence on the formation of a positive appraisal compared to the experience of no emotions.

Hypothesis 1b: The experience of positive endogenous emotions a brief moment before consumers come into contact with suboptimal food will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to the experience of no emotions.

In contrast to endogenous, exogenous means that the emotion is not relevant and not related to the decision itself, and is outside the goal setting and goal striving process (Zeelenberg et al., 2008). This is related to incidental emotions, which do not have a direct link to something in the immediate situation (Lerner & Keltner, 2000; Loewenstein & Lerner, 2003). Individuals rely upon their (unrelated) present feelings in order to make a decision instead of their feelings that are relevant for the decision (Lerner & Keltner, 2000). In relation to buying suboptimal food, exogenous emotions do not seem to be part of the goal of food consumption, and can be related to anything else than food consumption. It is likely to assume that positive exogenous emotions will have a larger influence on the formation of a positive appraisal towards suboptimal food than the experience of no emotions, since positive emotions in general are likely to have a larger influence on the formation of a positive appraisal of suboptimal food (Hypothesis 1a).

Hypothesis 1c: The experience of positive exogenous emotions a brief moment before consumers come into contact with suboptimal food will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to the experience of no emotions.

Both endogenous and exogenous emotions predict different effects on the behaviour of individuals (Zeelenberg et al., 2008). In general, consumers experience positive emotions in

response to eating and tasting food (Desmet & Schifferstein, 2008). Therefore, in combination with the assumption that positive endogenous emotions in relation to suboptimal food seem to be about the consumption of food, consumers that experience positive endogenous emotions are more likely to form a positive appraisal towards suboptimal food compared to consumers that experience positive exogenous emotions. This is due to the suggestion that the consumers that experience positive endogenous emotions are more consciously aware of the fact that consumption of food will trigger positive emotions compared consumers that experience positive exogenous emotions.

> *Hypothesis 1d*: The experience of positive endogenous emotions a brief moment before consumers come into contact with suboptimal food will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to the experience of positive exogenous emotions.

Moderating effect of arousal

Essential parts of emotions are arousal and the subjective feeling to diagnose the arousal (Schnachter & Singer, 1962). As part of emotions, arousal indirectly influences the decision-making (Darden & Babin, 1994), and the behaviour of an individual (Bagozzi et al., 1999). Arousal can be defined as "a subjective state of feeling activated or deactivated" (Barrett, 1998, p. 580), and can vary in level of arousal (Bagozzi, 1996). High arousal of positive emotions will lead to emotions like excitement, alertness and happiness, and low arousal of positive emotions will lead to emotions like contentment, calmness and relaxation (Johnson & Stewart, 2005; Russell & Lanius, 1984). The study of Bagozzi (1994) showed that the relation between attitude and positive beliefs will increase through the experience of arousal, whereas the relation between attitude and negative beliefs will decrease (Bagozzi, 1994). In addition, a high arousal

will strengthen the presence between attitude and positive beliefs, and it will weaken the presence between attitude and negative beliefs (Bagozzi, 1996). Thus, it is suggested that the level of arousal can have an influence on the relation between positive emotions and the appraisal towards suboptimal food.

Sanbonmatsu & Kardes (1988) found that individuals that experienced a high arousal of emotions based their attitudes on pieces of non-cognitive based information. This suggests that a high arousal of positive emotions will lead to a positive appraisal towards suboptimal food based on, for example, general impression or an individual's mood (Petty & Cacioppo, 1986). However, high arousal causes exhaustion of individuals' cognitive processes (Matthews & Davies, 2001). This will lead to a lower approach behaviour; individuals spend less time thinking about difficult decisions, examine less information in order to decide, and apply strategies to decide easily (Menon & Kahn, 2002; Donovan, Rossiter, Marcoolyn & Nesdale 1994; Massara, Liu, & Melara 2010).

Even though positive endogenous emotions are likely to have a larger influence on the formation of a positive appraisal towards suboptimal food compared to positive exogenous emotions (Hypothesis 1d), the exhaustion of individuals' cognitive processes through the high arousal is likely to take away the difference between the influence of endogenous and exogenous emotions. Therefore, the current research presumes that the experience of high arousal positive endogenous emotions has the same influence on the relation between positive emotions and the appraisal towards suboptimal food as the experience of high arousal exogenous emotions. Next, since high arousal of emotions causes exhaustion of individuals' cognitive processes, it is suggested that high arousal of both positive endogenous and exogenous emotions will have, in comparison to the experience of no emotions, a negative influence on formation of the appraisal towards suboptimal food. The current research proposes that:

Hypothesis 2a: The experience of high arousal of both positive endogenous and exogenous emotions a brief moment before consumers come into contact with suboptimal food will have a smaller influence on the formation of a positive appraisal towards suboptimal food compared to the experience of no emotions.

Sanbonmatsu & Kardes (1988) also found that individuals that experienced low arousal of emotions based their attitudes on argument strength. This suggests that when a consumer has arguments to buy suboptimal food, for example to consume it, low arousal of positive emotions will lead to a positive appraisal towards suboptimal based on this argument. After the experience of low arousal, it is likely to assume that consumers will decide more rationally about which product they will buy than when they experience no emotions. Therefore, it is suggested that low arousal of both positive endogenous and exogenous emotions will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to no emotions. In combination with the hypotheses that the experience of positive endogenous emotions will have a larger influence on the formation of a positive appraisal towards suboptimal food than the experience of positive exogenous emotions (Hypothesis 1d), it is also likely to assume that low arousal of positive endogenous emotions will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to the experience of low arousal of positive exogenous emotions.

Hypothesis 2b: The experience of low arousal positive endogenous emotions a brief moment before consumers come into contact with suboptimal food will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to the experience of no emotions.

Hypothesis 2c: The experience of low arousal positive exogenous emotions a brief moment before consumers come into contact with suboptimal food will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to the experience of no emotions.

Hypothesis 2d: The experience of low arousal positive endogenous emotions a brief moment before consumers come into contact with suboptimal food will have a larger influence on the formation of a positive appraisal towards suboptimal food compared to the experience of low arousal exogenous emotions.

Attitude, intention and behaviour

Appraisals are part of consumers' evaluations of or their attitudes towards an object, like suboptimal food. An individual's attitude towards an object is determined by "the subjective values or evaluations of the attributes associated with the object and by the strengths of these associations" (Ajzen, 1991, p. 12). Attitudes are also determined by behavioural beliefs (Ajzen, 1991; Ajzen, 2002; Ajzen, 2012): "beliefs about the likely outcomes of the behaviour and the evaluations of these outcomes" (Ajzen, 2012, p. 18). These behavioural beliefs result in a positive or negative attitude (Ajzen, 1991; Ajzen, 2002; Ajzen, 2012). The subjective values, evaluations or appraisals thus determine the attitude formation about suboptimal food. The determination of attitude by appraisal points out that attitudes are not the same as appraisal, but appraisal is a predictor for attitude. Based on this, it is likely to assume that the appraisal itself about suboptimal food needs to be already positive in order to create a positive attitude towards suboptimal food, and that a positive appraisal will lead to the formation of a positive attitude.

Hypothesis 3: When a positive appraisal is formed towards suboptimal food, a positive attitude towards suboptimal food will also be formed.

As stated by the Theory of Planned Behaviour, which is an extension of the Theory of Reasoned Action by Ajzen & Fishbein (1980), one of the components that determine intention is attitude (Ajzen & Fishbein, 1980; Ajzen, 1991). Next to attitude, subjective norm, the social pressure to perform a behaviour, and perceived behavioural control, the perceived ease of performing a behaviour, are the other components that determine the intention for a specific behaviour (Ajzen, 1991; Ajzen, 2002; Kassem & Lee, 2004; Orbell, Blair, Sherlock, & Conner, 2001). When all the three components are favourable and strong, the intention of an individual to perform a certain behaviour will also become strong (Ajzen, 2012). A change in one of the three components can influence individuals' intention, and in the end their behaviour (Ajzen, 2012). In the current research, subjective norm and perceived behavioural control will be held constant, since only the appraisal about suboptimal food will be influenced. Moreover, studies by Kassem and Lee (2004), and Orbell et al. (2001) showed that attitude was found as more accountable for the variance in intention than subjective norm and perceived behavioural control. Attitude is thus not the same as intention, but it is a predictor for intention. Therefore, based on the Theory of Planned Behaviour, it is suggested by the current research that a positive attitude will help to form a positive intention to perform the behaviour to buy suboptimal food.

Hypothesis 4: When a positive attitude is formed towards suboptimal food, a positive intention to perform the behaviour to buy suboptimal food will also be formed.

Behaviour is guided by intentions (Ajzen & Fishbein, 1980; Ajzen, 1991; Ajzen, 2012; Fishbein & Ajzen, 1975). Intentions are therefore the motivational factors that influence the behaviour of an individual (Ajzen, 1991). The stronger the individual's intention, the more likely the individual will perform a certain behaviour (Ajzen, 1991), and when a change in the individual's intention occurs, a change in the behaviour will likely follow (Ajzen, 2012). An individual's intention is thus not the same as an individual's behaviour, but intention is a predictor for behaviour. Based on the theory, it is presumed that when a positive intention to perform the behaviour to buy suboptimal food is formed, this will lead to the actual behaviour to buy suboptimal food.

Hypothesis 5: When the intention to perform the behaviour to buy suboptimal food is formed, the behaviour to buy suboptimal food will occur.

An overview of the hypotheses as conceptual framework is given in *Figure 1*.

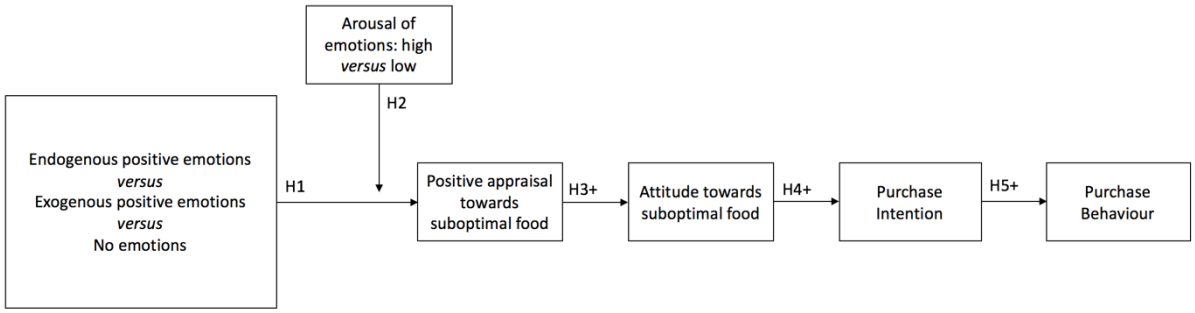

Figure 1. *The conceptual framework describing the independent variables (type of emotional influence (endogenous, exogenous, or no emotions), arousal (high or low)), and the dependent variables (positive appraisal, attitude, purchase intention, and purchase behaviour).*

Method

Participants and design

In total, 255 participants (M_{age} = 45.36; SD_{age} = 13.70; 82.4% female) were recruited for the experiment at the public library in Tilburg. Participants filled in an online survey, which was provided through a link on a computer, laptop or tablet that was provided for them. Participation was anonymous. All participants were recruited by being addressed and asked to participate by the researcher inside the public library. As compensation for their participation, participants had the choice between four carrots: two straight (i.e. optimal food) and two not straight carrots (i.e. suboptimal food). Participants were randomly assigned to a 2 (type of emotional influence: endogenous vs. exogenous) X 2 (arousal: high vs. low) + 1 control condition between-subjects design. The experiment took place for 10 days. The division of participants can be found in *Table 1*.

Table 1
Division of participants per condition

Condition	*n*	M_{age}	SD_{age}	Female (%)
Excitement food	51	44.61	15.34	82.4
Excitement vacation	52	46.52	13.58	88.5
Relaxation food	49	46.22	12.33	89.8
Relaxation vacation	50	43.62	12.53	84.0
Control	53	45.77	14.68	67.9

Note. n = number of participants, M = Mean, SD = Standard Deviation

Procedure and variables

Autobiographical recall procedure. Entering the room, participants first had to read information about the experiment and had to give consent for their participation. After this, participants had to induce emotions by completing an autobiographical recall procedure. In an autobiographical recall procedure, participants recall a personal situation in which they experienced a certain emotion (De Hooge, Zeelenberg, & Breugelmans, 2007; Roseman, Wiest,

& Swartz, 1994). Participants were asked to recall a personal situation depending on the condition they were assigned to. Participants in the endogenous condition were asked to recall a personal situation about consuming food, and in the exogenous condition to recall a personal situation about their last vacation (*item 1 of Appendix A*). The last vacation was chosen for the recall procedure, since it was assumed that most participants would have positive associations with this personal situation. This provided more certainty that positive emotions were experienced, instead of negative emotions. Moreover, recalling a last vacation had a low threshold to recall, since it was likely that most participants had been on a vacation in their lifetime. Participants in the high arousal condition were asked to think about excitement, and in the low arousal condition about relaxation (*item 1 of Appendix A*). Excitement and relaxation were chosen for the recall procedure, since it was assumed that these emotions are in general easier to recall in the personal situations than emotions like alertness and contentment. Moreover, excitement and relaxation are not easily confused; based on the valence-arousal circumplex chart, there is a clear contrast between them. Therefore, it can be assumed that the result of excitement and relaxation can be generalizable for the other positive emotions. Participants in the control condition had the recall procedure about a normal weekday; no specific emotions were asked to be recalled (*item 2 of Appendix A*).

After participants recalled the personal situation, they were asked to shortly describe this personal situation. Participants spent approximately two minutes on the recall procedure. To ensure participants spent approximately two minutes on the recall procedure, a timer was set for two minutes. Only after two minutes, participants could go forward with the survey (a timer was shown). After this, participants were told to walk to the next room, where a box containing two straight and two not straight carrots was presented.

Purchase behaviour. In the next room, participants were asked which carrot, number A till D (*item 3 of Appendix A*), from the presented box they wanted as compensation for their

participation. Participants could assume that the price of the two carrots was the same. It was told that it was necessary to choose a carrot as compensation now, so that there is enough stock of carrots for the next participants. The situation created to choose a carrot was almost similar to the situation in a supermarket. In both situation, individuals decide to buy food by comparing similar type of food with each other. Therefore, in this way, the experience of buying food was simulated. It was also told that choosing a compensation was necessary to complete the survey, and this compensation will be given at the end of the experiment. At the end of the experiment, a similar carrot as the choice was given. Carrots A and B were straight carrots and represented optimal food, and carrots C and D were not straight carrots and represented suboptimal food. This question showed the effect of the manipulation, by the independent variable 'type of emotional influence' and the moderator 'arousal', on the dependent variable 'purchase behaviour'. Independent of the choice for carrot A, B, C or D, the following questions measuring the dependent variables 'appraisal', 'attitude', 'purchase intention' concerned only carrots C and D, since these carrots represented suboptimal food.

Positive appraisal. To measure the dependent variable 'positive appraisal', participants were asked to indicate how much the following characteristics were attributable to carrots C and D. Unless otherwise indicated, all items were scored on a 7-point Likert-type scale. Nine characteristics were asked: *poor-looking*/*nice-looking*, *unpleasing*/*pleasing*, *unattractive*/*attractive*, *unsafe*/*safe*, *low quality*/*high quality*, *unnatural*/*natural*, *unpractical*/*practical*, *unfamiliar/familiar,* and *tasteless/tasteful*; (M = 4.74, SD = 1.16) α = .87 (Bell, Holbrook, & Solomon, 1991; Mitchell & Olsen, 1981).

Attitude. To measure the dependent variable 'attitude', participants had to indicate how much they agreed with the seven statements about carrots C and D, like: *buying this kind of carrot makes me feel good, the sale of this kind of carrot should not be completely banned, and I feel better about myself if I bought this kind of carrot* (1 = *strongly disagree* and 7 = *strongly*

agree); α = .73 (*item 4 of Appendix A*) (adjusted from Burton, Lichtenstein, Netemeyer, & Garretson, 1998; Gupta & Gould, 1997; Klein, Smith & John, 2004). After a reliability analysis, '*I would not feel guilty if I did not buy this type of carrot*' was removed. Without this statement, the reliability of the scale was α = .83 and the variable 'attitude' was created (*M* = 4.81, *SD* = 1.14). A control question, where participants had to fill in 'strongly agree', was inserted in order to check participants' attention. In total, 24 participants did not fill in this control question correctly (*item 5 of Appendix A*). The data was analysed with and without participants who did not fill in 'strongly agree' for this control question, and the results were compared. Unless otherwise indicated, no differences between these results were found.

Purchase intention. To measure the dependent variable 'purchase intention', participants had to indicate how much they agreed with the following statements about carrots C and D: *I am willing to buy this carrot in the future, I am likely to consider to buy this carrot the next time I think about buying food, and I would actively seek out this kind of carrot* (1 = *strongly disagree* and 7 = *strongly agree*); (*M* = 4.39, *SD* = 1.38) α = .83 (adjusted from Baker & Churchill, 1977).

Manipulation checks. As a manipulation check for the independent variable 'type of emotional influence' (endogenous vs. exogenous vs. no emotions), participants needed to indicate *to what extent they experienced the situation as positive, and to what extent they thought about consuming food and their last vacation* (1 = *not at all* and 7 = *very strongly*) (Williams & Aaker, 2002). This was asked to indicate whether participants actually recalled the personal situation as asked. In addition, as a manipulation check for the moderator 'arousal' (high vs. low arousal), participants needed to indicate how much *excitement, alertness, happiness, contentment, calmness, and relaxation* they experienced (0 = *not at all*, 7 = *very strongly*). These emotions are high and low arousal positive emotions, and came from Russell & Lanius (1984).

Extra information. After the manipulation checks, questions were asked to gather extra information about participants' behaviour. First, two questions about how often the participant bought groceries and carrots at the supermarket per week: *I buy groceries… times per week* (slide bar: 0 = *0 times per week*, 7 = *7 times per week*), *and I buy carrots … times per week* (slide bar: 0 = *0 times per week*, 7 = *7 times per week*). Moreover, the environmental self-identity (van der Werff, Steg & Keizer, 2014) of participants was measured by letting participants indicate how much they agreed with the following three items: *acting environmental friendly is an important part of who I am, I am the type of person who acts environmental friendly, and I see myself as an environmental-friendly person* (1 = *totally disagree* and 7 = *totally agree*); (M = 5.03, SD = 1.13) α = .89.

Demographics and end of survey. After the extra information, demographic questions were asked: participants' age, gender, and highest degree of education (biggest groups: trade/technical/vocational training 31.4%, and associate degree 36.1%). After this, participants were told that the survey was finished and they were thanked for their participation. Here, participants were shortly briefed about the purpose of the experiment; to measure the influence of positive emotions on the consumers' purchase intentions. Also, participants were told that they could contact the researcher via email when they wanted to receive the results of the study, or had any questions or comments. After the survey was finished, the compensation, which was in line with participants' choice made earlier in the survey, was collected.

Results

Preliminary checks were done to ensure no violation of assumptions like normality, kurtosis, skewness, linearity, homogeneity and homoscedasticity. Unless otherwise indicated, the data met the assumptions of these tests. The data was analysed with and without participants who did not fill in the control question correctly (N=24), and the results were compared. Unless otherwise indicated, no differences between these results were found. The variable 'condition' referred to the different conditions, and was coded as 1 = excitement food, 2 = excitement vacation, 3 = relaxation food, 4 = relaxation vacation, and 5 = control. The variable 'arousal' was coded as 0 = relaxation and 1 = excitement, and the variable 'type of emotional influence' as 0 = food and 1 = vacation. Unless otherwise indicated, an ANOVA was conducted for the analysis.

Manipulation checks

Low arousal. As a manipulation check, several analyses were carried out. First of all, the effect of condition on arousal (i.e. relaxation vs. excitement) was tested. With 'condition' as independent variable, there was a significant main effect of 'condition' on relaxation ($F(4,250) = 8.24$, $p < .001$, $\eta_p^2 = .117$) (*Table 2*), indicating that participants in the 'relaxation food' condition ($t(250) = 5.55$, $p < .001$, $\eta_p^2 = .110$) and in the 'relaxation vacation' condition ($t(250) = 3.96$, $p < .001$, $\eta_p^2 = .059$) reported more relaxation than participants in the control condition.

Table 2
Experience of the emotions relaxation and excitement per condition, and the extent to which participants thought about food or vacation related personal situation during the recall procedure

Condition	Relaxation		Excitement		Food		Vacation	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Excitement food	5.25	1.51	3.76	1.56	3.92	2.11	1.98	1.72
Excitement vacation	5.23	1.48	4.37	1.63	3.02	1.89	3.38	2.48
Relaxation food	5.92	1.12	3.80	1.66	4.71	1.67	2.33	2.05
Relaxation vacation	5.46	1.37	3.94	1.68	3.20	2.00	3.32	2.41
Control	4.34	1.63	3.28	1.49	2.89	1.91	1.47	1.09

Note. M = mean, SD = Standard Deviation

In addition, with 'arousal' and 'type of emotional influence' as independent variables, there was a significant main effect of 'arousal' on relaxation ($F(1,198) = 5.28$, $p = .023$, $\eta_p^2 = .026$) (*Table 2*), indicating that participants in the relaxation condition reported more relaxation than participants in the excitement condition ($t(198) = 2.40$, $p = .017$, $\eta_p^2 = .028$). No significant effects of 'type of emotional influence' ($F(1,198) = 1.54$, $p = .216$, $\eta_p^2 = .008$) or the interaction between 'arousal' and 'type of emotional influence' ($F(1,198) = 1.25$, $p = .265$, $\eta_p^2 = .006$) on 'relaxation' were found. These effects indicated that there was only a difference in relaxation between the different conditions in arousal.

High arousal. With 'condition' as independent variable, the analysis showed that there is a significant difference between the conditions in excitement ($F(4,250) = 3.08$, $p = .017$, $\eta_p^2 = .047$) (*Table 2*). Participants in the 'excitement vacation' condition ($t(250) = 3.46$, $p = .001$, $\eta_p^2 = .046$) reported more excitement than participants in the control condition. However, participants in the 'excitement food' condition ($t(250) = 1.53$, $p = .127$, $\eta_p^2 = .009$) did not report significantly more excitement than participants in the control condition. The analysis indicated that there was only a significant difference in level of excitement between participants in the 'excitement vacation' condition and the control condition. Next, with 'arousal' and 'type of emotional influence' as independent variables, no significant effects of 'arousal' ($F(1,198)$

= 0.74, p = .392, η_p^2 = s.004), 'type of emotional influence' (F(1,198) = 2.63, p = .107, η_p^2 = .013), or the interaction between 'arousal' and 'type of emotional influence' (F(1,198) = 0.99, p = .322, η_p^2 = .005) on excitement were found. These effects indicated that there were no significant differences in level of excitement between participants in the excitement and relaxation conditions. Thus, there was only a difference in level of excitement between participants in the 'excitement vacation' condition and the control condition, but not between participants in the 'excitement food' condition and the control condition, and between participants in the excitement and relaxation conditions.

Type of emotional influence. Second of all, the effect of condition on the type of emotional influence (i.e. food vs. vacation) was tested. How much participants thought about food/vacation was used as dependent variable. First, with 'condition' as independent variable, a significant effect was found on how much participants thought about food (F(4,250) = 7.95, p < .001, η_p^2 = .113) (*Table 2*). Participants in the 'excitement food' condition (t(250) = 2.74, p = .007, η_p^2 = .029) and in the 'relaxation food' condition (t(250) = 4.80, p < .001, η_p^2 = .084) reported more that they thought about food than the control condition. Next, with 'arousal' and 'type of emotional influence' as independent variable, there was a significant main effect of 'type of emotional influence' on how much participants thought about food (F(1,198) = 19.86, p < .001, η_p^2 = .091) (*Table 2*), indicating that participants in the food condition thought more about food than participants in the vacation condition (t(198) = -2.40, p = .018, η_p^2 = .028). No significant effects of 'arousal' (F(1,198) = 3.22, p = .074, η_p^2 = .016) or the interaction 'arousal' and 'type of emotional influence' (F(1,198) = 1.27, p = .260, η_p^2 = .006) on how much participants thought about food were found. These effects indicated that participants in the food condition thought more about food compared to participants in the vacation condition.

Next, with 'condition' as independent variable, a significant effect was found on how much participants thought about their vacation (F(4,250) = 9.03, p < .001, η_p^2 = .126) (*Table*

2). Participants in the 'excitement vacation' condition ($t(250) = 4.88$, $p < .001$, $\eta_p^2 = .087$) and in the 'relaxation vacation' condition ($t(250) = 4.67$, $p < .001$, $\eta_p^2 = .080$) reported more that they thought about their vacation than the control condition. In addition, with 'arousal' and 'type of emotional influence' as independent variable, there was a significant main effect of 'type of emotional influence' on how much participants thought about their vacation (*Table 2*) ($F(1,198) = 15.17$, $p < .001$, $\eta_p^2 = .071$), indicating that participants in the vacation condition thought more about their vacation than participants in the food condition ($t(198) = -3.26$, $p = .011$, $\eta_p^2 = .051$). No significant effects of 'arousal' ($F(1,198) = 0.21$, $p = .648$, $\eta_p^2 = .001$) or the interaction 'arousal' and 'type of emotional influence' ($F(1,198) = 0.45$, $p = .505$, $\eta_p^2 = .002$) on how much participants thought about their vacation were found. These effects indicated that participants in the vacation condition thought more about vacation compared to participants in the food condition.

Moreover, even if participants thought mainly about food (i.e. endogenous), they still could think about eating during their vacation (i.e. exogenous), and vice versa. This was indicated by coding the written recalled personal situations of participants with the terms 'food' and 'vacation', which were coded as 0 = no food/vacation thoughts, 1 = food/vacation thoughts. A Chi-square test for independence indicated significant associations between the five different conditions and the food ($\chi^2(4) = 154.08$, $p < .001$, $phi = .778$) or vacation ($\chi^2(4) = 221.74$, $p < .001$, $phi = .933$) thoughts. Participants in the food conditions recalled more food thoughts than participants in vacation conditions, and for vacation thoughts vice versa (*Table 3*). Therefore, the manipulation of the type of emotional influence was significant.

Table 3
Division of food or vacation related personal situations per condition

Condition	Food thoughts		Vacation thoughts	
	(*n*)	(%)	(*n*)	(%)
Excitement food	51	100.0	4	7.8
Excitement vacation	6	11.5	52	100.0
Relaxation food	49	100.0	5	0.2
Relaxation vacation	12	24.0	50	100.0
Control	15	28.3	0	0
Total	133	52.2	111	43.5

Note. n = number of participants

Thus, the manipulation of the level of arousal was for relaxation (i.e. low arousal) significant, and for excitement (i.e. high arousal) only between participants in the manipulated and control conditions. The manipulation of excitement was not significant between participants in the 'excitement food' condition and the control condition, and between participants in the excitement and relaxation conditions. The manipulation of the type of emotional influence was for both food (i.e. endogenous) and vacation (i.e. exogenous) significant. Even after coding the food and vacation thoughts in the recalled personal situation, the manipulation of the type of emotional influence was still significant.

Positive appraisal

According to the hypotheses 1abcd and 2abcd, the type of emotional influence (i.e. food vs. vacation) and the level of arousal (i.e. excitement vs. relaxation) has an influence on the formation of a positive appraisal towards suboptimal food. To test whether the type of emotional influence and arousal would have an influence on the positive appraisal, an ANOVA with 'positive appraisal' as dependent variable and 'condition' as independent variable was conducted. The analysis reported no significant effect of 'condition' on positive appraisal, $F(4,250) = 0.69$, $p = .600$, $\eta_p^2 = .011$) (*item 1 of Appendix B*).

In addition, with 'arousal' and 'type of emotional influence' as independent variables, also no significant effects of 'arousal' ($F(1,198) = 2.09$, $p = .150$, $\eta_p^2 = .010$), 'type of emotional influence' ($F(1,198) = 0.16$, $p = .689$, $\eta_p^2 = .001$), or the interaction between 'arousal' and 'type of emotional influence' ($F(1,198) = 0.09$, $p = .766$, $\eta_p^2 < .001$) on positive appraisal were found. This indicated that the difference in arousal, type of emotional influence, and the interaction did not have an influence on the positive appraisal. The findings rejected hypotheses 1abcd and 2abcd.

Attitude

According to hypothesis 3, a positive appraisal would lead to the formation of a positive attitude towards suboptimal food. A linear regression was conducted between 'positive appraisal' as independent variable and 'attitude' as dependent variable. The results of the regression showed a positive effect of appraisal on attitude ($R^2 = .35$, $F(1,253) = 135.91$, $p < .001$). The analysis indicated that the higher participants scored on appraisal, the higher they scored on attitude ($t(253) = 11.66$, $B = 0.58$ $p < .001$). Thus, the more positive the appraisal was, the more positive the attitude will be.

Next, with 'condition' and 'positive appraisal' as independent variables, there was a significant main effect of 'positive appraisal' on attitude ($F(1,245) = 138.56$, $p < .001$, $\eta_p^2 = .361$) (item 1 of Appendix B), indicating that there was a difference in scores between participants with a high score on appraisal and a low score. This is in line with the results of the regression. No significant effects of 'condition' ($F(4,245) = 0.90$, $p = .464$, $\eta_p^2 = .014$) or the interaction effect between 'positive appraisal' and 'condition' ($F(4,245) = 0.57$, $p = .688$, $\eta_p^2 = .009$) on attitude were found. After the excluding of participants who did not fill in the control question correct, with 'condition' as independent variable, there was a significant effect of 'condition' on attitude (see *item 2 of Appendix B*) ($F(4,226) = 2.54$, $p = .041$, $\eta p2 = .043$). This

result indicated that there is a difference in attitude between the different conditions. Participants in the 'excitement vacation' condition ($t(226) = 2.70$, $p = .007$, $\eta_p^2 = .031$), in the 'relaxation food' condition ($t(226) = 2.45$, $p = .015$, $\eta_p^2 = .026$), and in the 'relaxation vacation' condition ($t(226) = 2.26$, $p = .025$, $\eta_p^2 = .022$) had a significant higher attitude than participants in the control condition. Only, participants in the 'excitement food' condition ($t(226) = 1.21$, $p = .230$, $\eta_p^2 = .006$) did not have a significantly higher attitude than participants in the control condition.

In addition, 'arousal', 'type of emotional influence', and 'positive appraisal' were taken as independent variables to see whether the interactions between the variables had an effect on the dependent variable 'attitude'. Only a significant main effect of 'positive appraisal' on attitude ($F(1,194) = 105.94$, $p < .001$, $\eta_p^2 = .353$) was found. No significant effects of 'arousal', 'type of emotional influence', or the interaction between the three variables on attitude were found. For an overview of these results, see *Table 4*. This analysis indicated again that only the differences in participants' positive appraisal explained the differences in attitude, and participants with a high score on positive appraisal are more likely to have a high score on attitude. All these results confirmed hypothesis 3.

Table 4
Effects ANOVA with attitude as dependent variable and arousal, type of emotional influence and positive appraisal as independent variables.

	Num df	Den df	*F*-value	*p*-value	η_p^2
Arousal	1	194	0.43	.512	.002
Type of emotional influence	1	194	0.26	.610	.001
Positive appraisal	1	194	105.94	<.001	.353
Arousal x Type of emotional influence	1	194	1.53	.217	.008
Arousal x Positive appraisal	1	194	0.03	.875	<.001
Type of emotional influence x Positive appraisal	1	194	0.30	.587	.002
Arousal x Type of emotional influence x Positive appraisal	1	194	1.65	.201	.008

Note. Num df = degree of freedom of the numerator, Den df = degree of freedom of denominator, η_p^2 = Partial eta squared (effect size)

Purchase intention

According to hypothesis 4, a positive attitude would lead to the formation of a positive purchase intention towards suboptimal food. A linear regression was conducted between attitude and purchase intention. The results of the regression showed a positive effect of attitude on purchase intention (R^2 = .44, $F(1,253) = 458.63$, $p < .001$). The analysis indicated that the higher participants scored on attitude the higher they scored on purchase intention ($t(253) = 21.41$, $B = 0.97$, $p < .001$). Thus, the more positive the attitude was, the more positive the purchase intention will be.

Next, with 'condition' and 'attitude' as independent variables, there was a significant main effect of 'attitude' on purchase intention ($F(1,245) = 421.05$, $p < .001$, $\eta_p^2 = .632$) (*item 1 of Appendix B),* indicating that there was a difference in scores between participants with a high score on attitude and a low score. This is in line with the results of the regression. No significant effects of 'condition' ($F(4,245) = 1.20$, $p = .312$, $\eta_p^2 = .019$) or the interaction between 'attitude' and 'condition' ($F(4,245) = 1.21$, $p = .309$, $\eta_p^2 = .019$) on purchase intention were found.

In addition, 'arousal', 'type of emotional influence', and 'attitude' were taken as independent variables to see whether the interactions between the variables had an effect on the dependent variable 'purchase intention'. Only a significant effect of 'attitude' on purchase intention ($F(1,194) = 362.33$, $p < .001$, $\eta_p^2 = .651$) was found. No significant effects of 'arousal', 'type of emotional influence', or the interaction between the three variables on purchase intention were found. For an overview of these results, see *Table 5*. This analysis indicated again that only the differences in participants' attitude explained the differences in purchase intention, and participants with a high score on attitude are more likely to have a high score on purchase intention. All these results confirmed hypothesis 4.

Table 5
Effects ANOVA with purchase intention as dependent variable and arousal, type of emotional influence and attitude as independent variables.

	Num df	Den df	*F*-value	*p*-value	η_p^2
Arousal	1	194	2.45	.119	.012
Type of emotional influence	1	194	0.29	.597	.001
Attitude	1	194	362.33	<.001	.651
Arousal x Type of emotional influence	1	194	0.76	.384	.004
Arousal x Attitude	1	194	1.84	.177	.009
Type of emotional influence x Attitude	1	194	0.21	.651	.001
Arousal x Type of emotional influence x Attitude	1	194	0.69	.409	.004

Note. Num df = degree of freedom of the numerator, Den df = degree of freedom of denominator, η_p^2 *= Partial eta squared (effect size)*

Purchase behaviour

Participants had to choose between two optimal and two suboptimal carrots as their purchase. The suboptimal carrots were chosen by 21.6% of participants in the excitement food condition, 38.5% in the excitement vacation condition, 34.7% in the relaxation food condition, 36.0% in the relaxation vacation condition, and 20.8% in the control condition. This is shown in *item 3 of Appendix B*.

According to hypothesis 5, a positive purchase intention would lead to the formation of a positive purchase behaviour towards suboptimal food. A logistic regression was conducted to assess the impact of purchase intention on the likelihood participants chose the optimal or suboptimal carrot. The full model was statistically significant ($\chi^2(1, N = 255) = 41.06, p < .001$), indicating that the model was able to distinguish between participants who chose for the optimal carrot and for the suboptimal carrot. The model as a whole explained between 14.9% (Cox and Snell R square) and 21.1% (Nagelkerke R squared) of the variance of purchase behaviour, and correctly classified 72.5% of cases. It showed that intention is a predictor for the purchase behaviour of suboptimal carrots ($p < .001$) with an odd ratio of 2.13. This indicated that participants who had a high purchase intention for buying suboptimal carrots were

approximately twice as much likely to buy suboptimal carrots than participants who had a low purchase intention, and this confirmed hypothesis 5.

In addition, more logistic regressions were conducted to assess to impact of the different conditions, arousal, and the type of emotional influence on the likelihood participants chose the optimal or suboptimal carrot. The full model of arousal and type of emotional influence was not statistically significant ($\chi^2(3, N = 255) = 4.19$, $p = .242$), indicating that the model was not able to distinguish between participants. The model as a whole explained between 2.1% (Cox and Snell R square) and 2.9% (Nagelkerke R squared) of the variance of purchase behaviour, and correctly classified 67.3% of cases. The model showed that both 'arousal' and 'type of emotional influence were not significant predictors for the purchase behaviour of suboptimal carrots (*Table 6*).

Table 6
Logistic regression of purchase behaviour per condition with purchase behaviour as dependent variable, and condition, arousal, and type of emotional influence as covariates.

Condition	Control		Excitement food		Excitement vacation		Relaxation food	
	OR	CI	OR	CI	OR	CI	OR	CI
Excitement food	1.01	0.41 – 2.69	-	-				
Excitement vacation	2.39*	1.00 – 5.68	0.94	0.41 – 2.15	-	-		
Relaxation food	2.03	0.84 – 4.92	1.93	0.79 – 4.70	0.85	0.38 – 1.91		
Relaxation vacation	0.09	0.89 – 5.18	2.05	0.85 – 4.94	1.11	0.50 – 2.48	2.27	0.95 – 5.43

Note: OR = Odds Ratio, CI = Confidence Interval (95%)
** $p < .05$*

Also, the full model of conditions ($\chi^2(4, N = 255) = 7.17$, $p = .127$) was not significant, so the model was not able to distinguish between participants. The model as a whole explained between 2.8% (Cox and Snell R square) and 3.0% (Nagelkerke R squared) of the variance of purchase behaviour, and correctly classified 69.8% of cases. It showed, however, that the excitement vacation condition is a predictor for the purchase behaviour of suboptimal carrots ($p = .049$) with an odd ratio of 2.39 (*Table 6*). This indicated that participants who were in the excitement vacation conditions were 2.39 times as much likely to buy suboptimal carrots than

participants who were in the control condition (*item 3 of Appendix B*). For an overview of the rest of the results, see *Table 6*.

Other outcomes

Furthermore, different Pearson correlations were conducted between several variables to investigate other outcomes than was suggested by the hypotheses (*Table 7*).

Table 7
Pearson Correlations between dependent variables and independent variables

	1.	2.	3.	4.	5.	6.	7.	8.
1. Positive appraisal	-							
2. Attitude	.591***	-						
3. Intention	.538***	.803***	-					
4. Age	.081	.006	.04	-				
5. Educational level	.096	.189**	.161*	-.081	-			
6. Environmental self- identity	.328***	.292***	.301***	.217***	.124*	-		
7. Frequency of groceries	.022	-.003	-.048	.087	0	.054	-	
8. Frequency of purchasing carrots	.081	.098	.074	-.055	-.049	.080	.178**	-

** $p < .05$, ** $p < .01$, *** $p < .001$*

These Pearson correlations showed, among others, that the high score of participants on environmental self-identity correlated positive with the high score on positive appraisal ($r = .328$, $p < .001$), attitude ($r = .292$, $p < .001$), and intention ($r = .301$, $p < .001$) towards the suboptimal carrots. After adding 'environmental self-identity' as covariate in the mentioned ANOVAs, no new effects than already mentioned have been found, and therefore those effects were not reported. Also, the high score on the finished education of participants ($M = 4.39$, $SD = 1.39$) correlated positive with the high score on attitude ($r = .189$, $p = .002$) and intention ($r = .161$, $p = .01$) towards the suboptimal carrots. The correlations with age, frequency of groceries, and frequency of purchasing carrots with the variables 'positive appraisal', 'attitude', and 'intention' were not significant. In addition, the higher participants scored on age ($r = .217$,

$p < .001$) and the educational level ($r = .124$, $p = .048$), the higher they scored on the environmental self-identity was. Also, the higher the score was on the frequency participants bought groceries, the higher the score on the frequency they bought carrots ($r = .178$, $p = .004$).

General Discussion

Summary

A large amount of the produced food that is wasted throughout the supply chain is thrown away in the retail and home stage by consumers. One group of wasted food is suboptimal food. Suboptimal food deviates from optimal food in the visual sense (e.g., the colour, the shape, and the physical damage), and deviates from consumers' expectations stored in their memory. Therefore, consumers will more likely perceive suboptimal food as unsafe, unattractive or unpalatable to eat, and as lacking good sensory properties. This has consequences for consumers' appraisal towards suboptimal food, and in the end their purchase behaviour. It was suggested by this research that the influence of positive emotions, which broadens people's momentary thought-action repertoires, could help to develop a positive appraisal towards suboptimal food and thereby positively influence the purchase behaviour of suboptimal food. The research showed that participants were most likely to opt for a suboptimal carrot when they were experiencing excitement about a non-food related situation. It also showed that the influence of positive emotions, independent of arousal and type of emotional influence, did not have an effect on the formation of a positive appraisal towards the suboptimal carrot. Nevertheless, once a positive appraisal towards suboptimal food was formed, it resulted to the formation of a positive attitude towards suboptimal food, and that resulted to a positive purchase intention towards suboptimal food. In the end, consumers with a high purchase intention had a higher tendency to buy the suboptimal carrot than consumers with a low purchase intention. This formation of a positive purchase behaviour of suboptimal carrots when a positive appraisal was formed, thus occurred even when the positive emotions did not have an influence on the positive appraisal. The effect of positive emotions on this process is therefore unclear, and will be discussed later on. In addition, a high score on environmental self-identity had a positive correlation with a high score on a positive appraisal, attitude, and

purchase intention towards suboptimal food. Thus, by causing a recall of excitement about a non-food related situation by consumers, before they decide between optimal and suboptimal food, the highest purchase of suboptimal food will occur.

Theoretical implications

The findings of this research have theoretical implications and contribute to existing research in areas like emotions and consumer behaviour. Research in the area of emotion could use the findings of this research, since the Broaden-and-Build Theory of Positive Emotions by Fredrickson (2001) was applied to develop a positive appraisal towards suboptimal food. Based on this theory, it was expected that the experience of positive emotions would have a larger influence on the formation of a positive appraisal towards suboptimal food, compared to the experience of no emotions. This expectation was made, since this theory states that positive emotions broaden people's momentary thought-action repertoires, or in other words, broaden the tendency to perform a certain behaviour (Fredrickson, 2001). As a result, individuals are more likely to explore new things, and to take in new information and experiences (Csikszentmihalyi, 1990; Izard, 1977; Ryan & Deci, 2000). Fredrickson & Branigan (2000) found evidence for this effect by showing an (positive or negative) emotional or a non-emotional film to participants. Participants that saw the positive emotional film listed thereafter more activities they would like to do than participants that saw the negative emotional film and the non-emotional film. Thus, participants that saw the positive emotional film were more open for (new) activities or experiences than other participants. However, as the findings of this research showed, the experience of positive emotions does not have a larger influence on the formation of a positive appraisal compared to the experience of no emotions. An explanation for these findings could be that, after the experience of positive emotions, participants in this research felt less the urge to explore than participants in the research of Fredrickson & Branigan

(2000). This may have to do with that participants in the research of Fredrickson & Branigan (2000) could listed every activity they would like to do; their answer was not restricted, whereas participants in this research had to indicate on a 7-point scale whether the characteristic fitted the suboptimal food; their answer was restricted by the survey. This suggests that the broaden effect of positive emotions could be less effective when, after the experience of positive emotions, the answer itself is restricted. This suggestion and contribution could be investigated by future research, and should be taken into account by further researches that want to use the influence of positive emotions to create the tendency to explore new things.

These findings also contribute to existing research by using the autobiographical recall procedure to induce positive emotions. In the experiment, participants had to recall a personal situation where they felt relaxed or excited about consuming food or about their last vacation. With this autobiographical recall procedure, it was aimed that participants would experience positive emotions afterwards. Several studies pointed out that the autobiographical memory, which is the part of an individual's memory that is concerned with the collection of one's past experiences, can be influenced by an individual's current mood state, because of the mood-congruent bias (Lloyd & Lishman, 1975; Clark & Teasdale, 1982; Teasdale & Fogarty, 1979). This means that when an individual is already in a sad mood, the recalled personal situation is more likely to be negative than positive. During the autobiographical recall procedure of this research, the influence of the mood-congruent bias was minimized by not only asking participants to describe a situation (i.e. about consuming food or the last vacation), but also by asking to recall a positive emotion (i.e. relaxation or excitement). By doing this, the influence of the mood-congruency bias was minimized, and there was more certainty that a positive personal situation was recalled by participants. Therefore, this research contributes to existing research by showing that the addition of recalling a positive emotion during the

autobiographical recall procedure creates more certainty that the recall procedure results in a positive personal situation.

Moreover, the findings of the manipulation contribute to existing research. These findings showed that the experience of excitement (i.e. high arousal) about vacation (i.e. exogenous) results in a higher purchase of suboptimal food compared to the experience of excitement about food (i.e. endogenous), and the experience of relaxation (i.e. low arousal). These findings contribute to existing research, since it is contradiction to the expectations. It was suggested that the experience of relaxation about consuming food would result, at the end, in the highest purchase of suboptimal food. A possible explanation for these findings can be found in the Elaboration Likelihood Model (ELM) (Petty & Cacioppo, 1986; Petty et al., 1981; Petty, Cacioppo & Schumann., 1983). This theory states that individuals process information with either the central route or the peripheral route. In the central route, individuals process information with logic and take into account the quality of the arguments. In the peripheral route, individuals process information based on shortcuts, like emotional messages or the aesthetics, in judging the quality of a product (Petty & Cacioppo, 1986; Petty, Cacioppo & Goldman, 1981; Petty, Cacioppo & Schumann., 1983). Factors that determine which route will be used are contextual factors, dispositions, and level of involvement (Maclnnis & Jaworski, 1989; Payne, Bettman & Johnson, 1993). When individuals think about their last vacation, they could experience that this information is irrelevant for the achievement of the goal; buying food. When individuals experience information as irrelevant for the achievement of their goal, it results that they process the information with the peripheral route (Meyers-Levy & Malaviya, 1999). Moreover, when the cognitive capacity of individuals is more exhausted, like with excitement, it also results that individuals process information with the peripheral route (Reinhard & Sporter, 2008; Sanbonmatse & Kardes, 1988). There is a possibility that individuals chose suboptimal food over optimal food when they processed the information

through the peripheral route, because they look at the food aesthetics (i.e. the shape) and think it is funny to buy such weird shaped food. Then, individuals do not think about the logic or the meaning of the shape, like individuals would do when they process information with the central route. This could be an explanation for the finding that participants that experienced excitement about vacation results in the highest purchase of suboptimal food. Future research is required to investigate whether this suggestion is correct and whether the Elaboration Likelihood Model plays a role in the decision-making of suboptimal food.

In addition, another explanation for the finding that, instead of the experience of relaxation about consuming food, the experience of excitement about the last vacation results in the highest purchase behaviour of suboptimal food, can be given. When participants did recall a personal situation about consuming food, it is likely to assume that they imagined food with information from their memory. Inside individuals' memory, their existing product category is stored (Bloch, 1995; Meyers-Levy & Tybout, 1989). Information that is in line with the existing product category knowledge is preferred by individuals (Mervis & Rosch, 1981). It was suggested by this research that consumers create their product category knowledge based on the extrinsic aspects of optimal food, since this food is normally presented in stores. Therefore, consumers prefer optimal food, since this food is in line with their product category knowledge. Thus, when participants were recalling a personal situation about consuming food, it could be that they imaged consuming optimal food. When they subsequently had to choose between an optimal or a suboptimal carrot, those participants chose faster the optimal carrot than the suboptimal carrot, since this carrot is in line with the imaged carrot. The suboptimal carrot deviated then from the optimal carrot imagined by participants, and was not preferred. It is then likely to assume that participants that recalled a personal situation about their last vacation used their existing product category knowledge less and imaged less optimal food when they subsequently had to choose between the optimal and suboptimal carrot. Therefore,

those participants chose faster the suboptimal carrot than the optimal carrot than participants that recalled a personal situation about consuming food. Future research is required to investigate these assumptions.

Also a contribution to other areas of research is made with the findings of this research, namely to the area of consumer behaviour. Before this research, no research related to consumer behaviour examined the influence of positive emotions on the formation of a positive appraisal towards suboptimal food, and in the end the purchase behaviour. The findings of this research suggests that consumers' purchase behaviour can be influenced with positive emotions, since the experience of excitement about a non-food related situation results in the highest purchase of suboptimal food. Future research in the field of consumer behaviour should take into account these findings when they want to change individuals' behaviour towards a product.

Last, the findings of this research also relate to existing research, since they are in line with the Theory of Planned Behaviour (Ajzen & Fishbein, 1980; Ajzen, 1991); a positive attitude is a predictor for a positive intention, which is a predictor for a positive purchase behaviour. Therefore, the findings of this research broadens the field in which the Theory of Planned Behaviour can be applied, namely also in relation of buying suboptimal food. Interesting are the findings that experiencing excitement about a non-food related situation leads to the highest purchases of suboptimal carrot, but not to the most positive appraisal, attitude and intention. These findings suggest that attitude and thereafter intention are not always the reason for particular behaviour, and that creates the suggestion that there is another factor that influences behaviour, besides intention. With these findings, both the attitude-intention gap and the intention-behaviour gap still exist. Thus, the findings of this research contributes to existing research, since it is in line with the Theory of Planned Behaviour, and it also expand this theory by suggesting that purchase behaviour can be formed without the formation of an attitude and an intention.

Practical implications

The findings of this research could be implemented by marketers. Marketers of food-related companies could implement the findings by causing a recall of excitement about a non-food related situation by consumers before they are about to purchase (optimal and suboptimal) food. In that situation, the chances of consumers buying suboptimal food are the highest. This can be done by the means of marketing instruments, such as posters or movie clips. However, marketers should try out which marketing tool works best for their company. In addition, marketers should focus on consumers with a high educational level and an environmental self-identity as the target group for suboptimal food. The findings showed that individuals with a high score on educational level also scored high on environmental self-identity. Moreover, individuals that scored high on environmental self-identity also scored high on purchase intention. On the basis of these implications, marketers should change their marketing strategy and this will lead to an increase in the sales of suboptimal food.

Limitations and future research

Although this research was designed to manipulate positive emotions in different conditions, and to measure how this affected the positive appraisal and in the end the purchase behaviour of consumers, there are a number of limitations that can be addressed in future research One limitation of this research is that the manipulation of excitement (i.e. high arousal) was only significant between participants in the 'excitement vacation' condition and the control condition. This manipulation was not significant between participants in the 'excitement food' condition and the control condition, and between participants in the excitement and relaxation conditions. An explanation of the non-significant manipulations of excitement could be the translation of the emotion 'excitement' to Dutch as 'opwinding'. For 'opwinding' was chosen, since this positive emotion scored high on high arousal on the valence-arousal circumplex chart

(Russel, 1980). The most extreme low and high arousal positive emotion were chosen for this research, so the difference between them would be clear. However, the choice of the translation as ‘opwinding’ may have influenced participants during the experiment. A possibility could be that the connotation of the word ‘opwinding’ may be less positive than the word signifies, and therefore participants may have interpreted the question about ‘opwinding’ different than was intended. Still, ‘opwinding’ is a correct translation for excitement, and therefore future research could investigate whether alternative translations for the emotion ‘excitement’ are an option, and whether different results would come out when these alternative translations are used. An examples of an alternative is ‘enthousiasme’. A pre-study could be considered to indicate which translation is most in line with the original term for the emotion.

Another limitation of this research is the choice of carrots and their usage threshold. Carrots are vegetables that you have to rasp before you can use them. This could be an inconvenience when the shape is not straight, especially for people with less strength/mobility in their hands. This could have been a threshold for participants to choose the suboptimal carrot. Different results could be found when suboptimal grated carrots or other suboptimal vegetables, like red peppers or zucchinis, were used. These vegetables can be cut and used immediately. Then, the focus of choosing the suboptimal food does not depend on its practicality, like rasping, but more on other factors, like the taste. Further research could do the same experiment with grated carrots, red peppers, or zucchinis to see if it depends on the kind of vegetable whether a positive appraisal is formed or not.

Future research could investigate the role of positive emotions in motivating individuals that scored low on environmental self-identity to buy suboptimal food. As the findings of this research showed, individuals with a high score on environmental self-identity also scored high on positive appraisal, attitude, and purchase intention towards suboptimal food. These findings are in line with the research of Carfora, Caso, Sparks & Conner (2017), which showed that an

environmental self-identity is an important predictor for intention and behaviour. Furthermore, consumers with a past behaviour of purchasing sustainable products have the tendency to buy more sustainable products in the future than consumers without this behaviour (Nguyen, Lobo & Greenland, 2016). This is, because past behaviour strengthens the intention-behaviour relationship (Nguyen, Lobo & Greenland, 2016). Individuals with a high score on environmental self-identity thus already have the tendency to buy products like suboptimal food. Therefore, it is interesting for future research to investigate how individuals with a low score on environmental self-identity can be motivated to buy suboptimal food. A manipulation, like the influence of positive emotions, probably has more effect on the tendency to buy suboptimal food of individuals with a low score on environmental self-identity than on the already established tendency of individuals with a high score. Positive emotions could broaden the momentary thought-action repertoires of individuals that score low on environmental self-identity, and this could result in exploring products like suboptimal food. Future research is required to investigate whether the influence of positive emotions could motivate individuals that scored low on environmental self-identity to buy suboptimal food.

Concluding remarks

Taken together, this research aimed to investigate the influence of positive emotions on the formation a positive appraisal towards suboptimal food and thereby positively influenced the purchase behaviour of suboptimal food. This was done by asking individuals to recall a personal situation where they experienced a positive emotion, differentiating in arousal and type of emotional influence. The results showed that only experiencing excitement about a non-food related situation increased the purchase behaviour of suboptimal food. In contradiction to the expectation, the influence of positive emotions did not have an effect on the formation of a positive appraisal towards the suboptimal carrot. Nevertheless, once a positive appraisal

towards suboptimal food was developed, a purchase behaviour was the end result. Marketers could use these findings by using marketing tools to cause a recalling of excitement about a non-food related situation by consumers before they are about to purchase (optimal and suboptimal) food. Consumers with a high score on educational level and on environmental self-identity are proposed as the target group for suboptimal food. If marketers would use the proposed implications to change the marketing strategies and the sale of suboptimal food would increase as a result, good opportunities for retailers could be created. Then, retailers could lower the aesthetic standards of food and could sell the produced suboptimal food, instead of throwing it away. In the end, the ugly waste becomes a beautiful vegetable.

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Appendices

Appendix A: Survey

Item 1: Manipulated condition recall procedure

Excitement [Relaxation] about consuming food [your last vacation]

I would like to ask you to think back about a situation in which you felt very excited [very relaxed] while you were consuming food [about your last vacation]. Put yourself in the situation as if you are experiencing it at this very moment. Take your time and try to remember as many details of your behaviour and of the feelings as possible.

You can think of for example where the situation took place, what kind of food you were consuming, who was with you while you were consuming the food [where the vacation took place, with who you went, and what you were planning to do on this vacation]. Please describe the situation as precisely as possible in a short way below. Describe the event in such a way that someone who was not present can imagine it very well. I understand that the details of the situation may contain very sensitive or personal information. For that reason, I guarantee that your answers will be anonymous and the data will be treated strictly confidential.

Item 2: Control condition recall procedure

Feelings on a normal weekday

I would like to ask you to think back about a normal weekday. Put yourself in the situation as if you are experiencing it at this very moment. Take your time and try to remember as many details of your behaviour and of the feelings as possible.

You can think of for example where the situation took place, what kind of activity you did, and who was with you. Please describe the situation as precisely as possible in a short way below. Describe the event in such a way that someone who was not present can imagine it very well. I understand that the details of the situation may contain very sensitive or personal information. For that reason, I guarantee that your answers will be anonymous and the data will be treated strictly confidential.

Item 3: Picture of carrot A till D

Item 4: Statements dependent variable 'attitude'

1. Buying this type of carrot makes me feel good
2. I would love it when this type of carrot is available for the product category I purchase
3. When I buy this type of carrot, I will feel that I am getting a good deal.
4. The presence of this type of carrot makes the assortment of food more realistic.
5. The sale of this type of carrot should not be completely banned
6. I would not feel guilty if I did not buy this type of carrot.
7. I feel better about myself if I bought this type of carrot.

Item 5: Table 1a.

Table 1a

Division of participants per condition after deletion of participants who did not fill in the control question correctly.

Condition	*n*	M_{age}	SD_{age}	Female (%)
Excitement food	49	44.90	15.67	81.6
Excitement vacation	43	46.47	13.68	86.0
Relaxation food	46	46.37	12.62	89.1
Relaxation vacation	46	43.85	12.70	84.8
Control	47	46.19	15.12	66.0

Note. n = number of participants, M = Mean, SD = Standard Deviation

Appendix B: Results

Item 1: Figure 3.

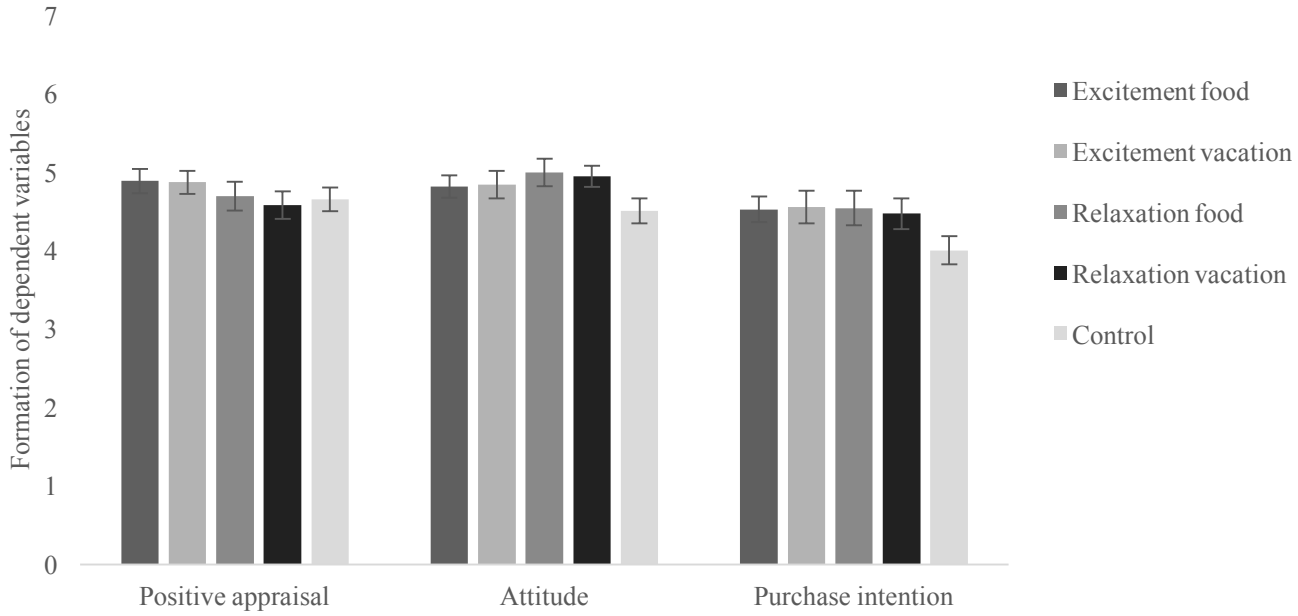

Figure 3. *Positive appraisal, attitude, and purchase intention per condition. Error bars denote one standard error around the mean.*

Item 2: Figure 4.

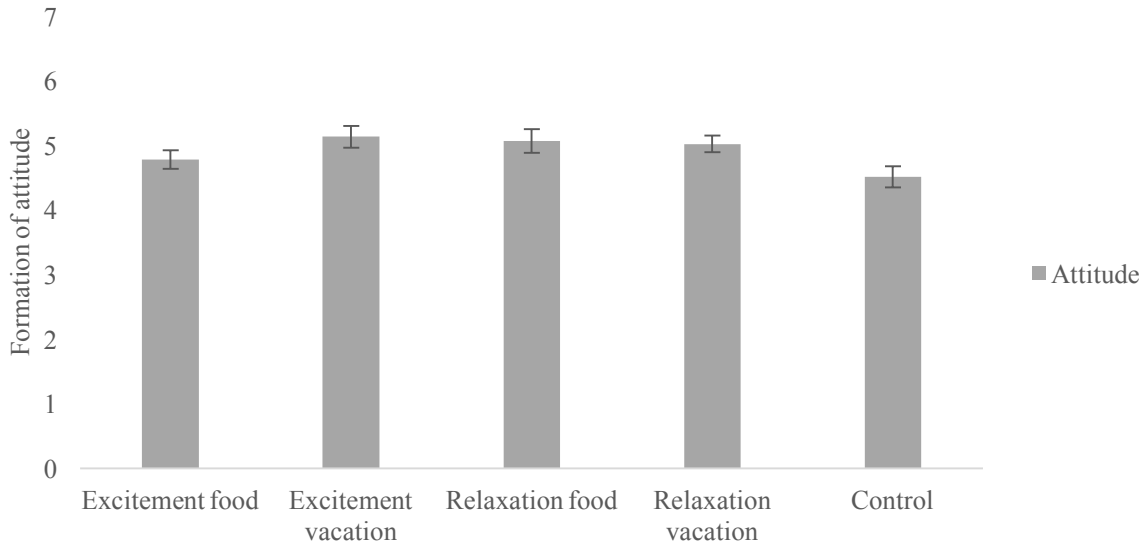

Figure 4. *Attitude per condition after deletion of participants who did not fill in the control question correctly. Error bars denote one standard error around the mean.*

Item 3: Figure 5.

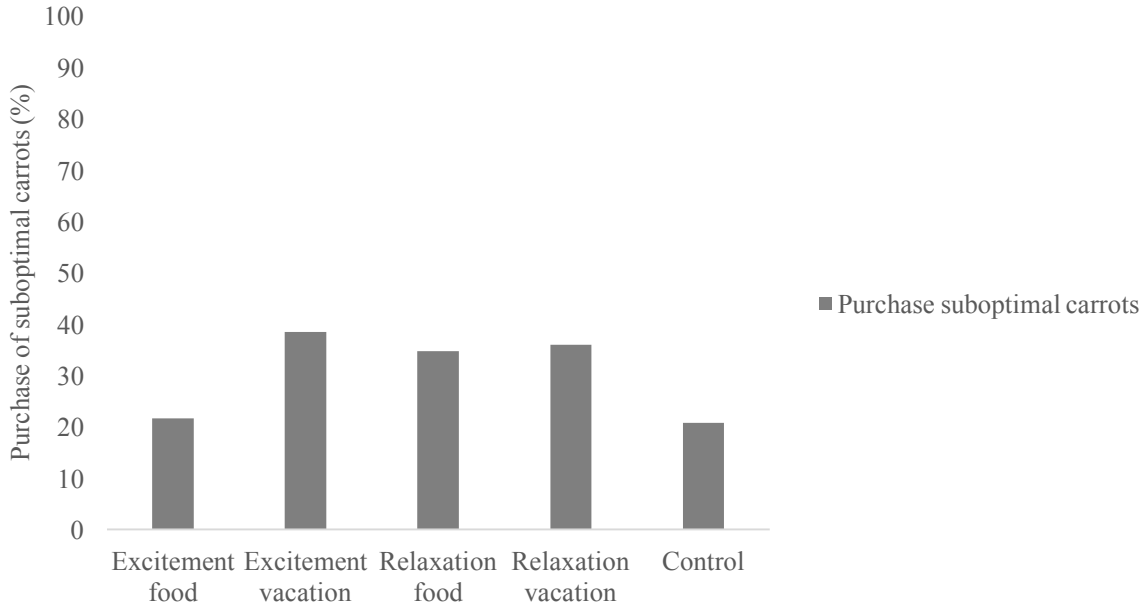

Figure 5. *Purchase of suboptimal carrots (in percentage) per condition.*