

Light?

A study on consumer responses to light claims on indulgent food



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Abstract

Overweight and obesity are a huge problem nowadays. Unhealthy food choices and an excessive calorie intake are the main reasons for this. Low fat or low calorie products are produced as a cause for this problem. These are communicated to consumers by claims on it. Claims on food products can change consumers' behaviours, not only in a positive but also in a negative way. Consumers can have health inferences caused by a claim that can cause them to think a product is generally healthier than it actually is, through the so-called health halo. Furthermore, they might think that the product contains fewer calories than it actually does. Mostly, consumers also think that a product with a health claim on it is less tasty. Emotions are also related to their behaviours; more negative emotions might be felt while eating the normal crisps compared to the light crisps. In this research we did not only look at the effect of either a claim or no claim on a bag of crisps. Also, the point of view was different. The perception of participants was manipulated such that they either saw someone else eating the crisps, or had to imagine eating the crisps themselves, by showing them a movie. Because of the so-called actor-observer difference for eating an indulgent product such as crisps; people themselves will eat because of the situation, while someone else does this same thing because it is seen as a personal characteristic. In a 2 by 2 design people saw either a woman eating crisps, or had to imagine eating the crisps themselves, with either a light claim on the bag of crisps or no claim on it. After participants saw the movie, they had to fill in the questionnaire with questions about the health, taste, calorie estimations, portion size appropriateness, self-control and emotional state, and also restrained eating was measured. As expected, people thought that the product with the claim was healthier compared to the product without the claim. Also, we saw that there was an actor-observer difference; people thought the other had less self-control compared to yourself. No effects were found for negative inferences raised by the claim. Not all that we expected was found, further research might find effects. In future research people should not only imagine eating the crisps themselves, but actually eat the crisps. Also different portion sizes and different kind of flavours of crisps can be used, or maybe let the participants eat as much as they want.

1 Introduction

Nowadays, overweight and obesity are an increasing problem (Borgmeier & Westenhoefer, 2009). In the year 2012 41.5% of the Dutch people were overweight and even 10.2% obese (Centraal Bureau voor de Statistiek, 2013). Overweight and being obese have large consequences for public health. There is a long list of consequences; it can result in an increased risk for diseases and problems such as diabetes, hypertension, coronary heart disease, pulmonary diseases, sleep apnea, depression and overall reduced quality of life (Nejat, Polotsky & Pal, 2010). If overweight and obese individuals lose weight, it reduces risk factors for diabetes and cardiovascular disease (Pi-Sunyer, et al., 1998).

It has been shown that particularly unhealthy food choices and too much energy intake are primarily responsible for this increase in the number of people being overweight (Speakman & Westerterp, 2010). Many consumers are well aware that certain tasty foods are less healthful, and high in calories. Nevertheless, they have the need to eat these indulgent foods and prefer to do that without the guilt of eating too much. Inspired by these consumer needs for guilt-free pleasures, the food industry developed and marketed healthier alternatives. These healthier alternatives are foods in which calories, sugar or fat are lowered and this is typically communicated to consumers by making use of front-of-pack claims such as 'low-fat' or 'light' (Belei, Geyskens, Goukens, Ramanathan & Lemmink, 2012).

Previous research has shown that foods with such claims may lead to changes in the way consumers perceive the food, and it may even lead to increased consumption. Consumers who see a claim on the front of a package, rate this "as more helpful for weight management, more healthful, and lower in calories" than those who saw a product without that claim (Labiner-Wolfe, Lin & Verrill, 2010). Moreover, Chandon and Wansink (2007) showed that people underestimate the caloric content of food products, when these are claimed to be healthy. Another study similarly showed that people have wrong beliefs about the healthiness of food products (Provencher, Polivy & Herman, 2009); people think a product is healthier than it actually might be. This is called the "health halo" effect of claims; because of a claim or logo, the food seems healthier than it is which may lead to overconsumption (Chandon, et al., 2007; Chandon, 2013).

The underlying reasons for these consumption effects of claims are not yet clear. It has been suggested that it is because these foods are easier to justify (Chandon, et al, 2007) and lead to less consumption guilt (Chandon & Wansink, 2006). Other authors emphasize that consumers are more likely to underestimate the calorie content of low fat foods and have more positive health attributions for low-fat-labeled food than for regular-labeled food (Ebner, Latner & Nigg, 2013).

Nevertheless, there are also studies that do not find consumption effects of health and nutrition claims on food packages. For example, Steenhuis, Kroeze, Vyth, Valk, Verbauwen & Seidell (2010) did a study on actual consumption behaviour related to nutrition logos and potential compensatory eating behaviours due to nutrition logos. The aim of their study was to assess what effects there would be when using an existing nutrition logo on consumption and the product evaluation of a chocolate mousse cake. This study did not find significant effects of a nutrition logo on consumption or tastefulness.

Overall, there are many unanswered questions about possible consumption effects of nutrition claims on indulgent foods and why they are occurring or not. In this study, we examine consumer perceptions of appropriate portion sizes of indulgent foods and whether these perceptions change when a nutrition claim ('light') is attached to the food package. We also focus on supposed underlying mechanisms explaining potential changes in the appropriateness of a particular portion. Does this change because of changes in healthiness, taste or calorie assessments? Or does a claim reduce consumers' feelings of guilt after eating?

In addition to examining the effects of a nutrition claim on perceptions, we examine an additional factor. More specifically, we focus on *who* is eating the indulgent food. Perceptions of what is appropriate to eat may be strongly influenced by whether consumers are eating the food themselves or whether they see someone else eating the food. Research in social psychology has focused on the difference of being an actor or an observer in a particular situation (Jones & Nisbett, 1972). Depending on whether they are an actor or observer, they tend to make different judgements. When people are an actor in a particular situation; they tend to attribute their own actions to external influences. In contrast, when people observe an action of someone else, they tend to attribute these actions to internal influences. So, if an actor will do something himself/herself, then this will be because of the surroundings; the situation will be the focus of attention. While if someone else does something, someone will say it is a personal characteristic of that person. This is mostly with negative things like eating too much of an indulgent food product. Related to this actor-observer difference is the 'self-serving bias: "taking credit for personal success, but blaming external factors for personal failure" (Campbell & Sedikides, 1999). Research on how people view other people's eating behaviour showed that people have pronounced views on other people's behaviour. For example, seeing people eat unhealthy, fattening food products, gives rise to moral judgments about them (Steim & Nemeroff, 1995). Steim, et al., (1995) found that people who ate 'good' foods (healthy, non-fattening) were rated as more tolerant of others, ethical, sexually monogamous and in general more moral than people who ate 'bad' foods (unhealthy, fattening).

Hence, the main research aim of this study is to examine the influence of a 'light' claim at a crisps package among consumers. More specifically, the objectives of the study are as follows:

- (1) To assess the effect of a 'light' claim on perceptions of portion size appropriateness, food healthiness, tastiness, and calorie estimations
- (2) To assess whether these outcomes (crisps perceptions, caloric estimations) differ according to the perspective of the individual giving the judgments (actor versus observer).
- (3) To assess whether potential negative judgements about eating light crisps are more strongly attributed to other people's lack of self-control traits than own lack of self-control traits.

An experimental study will be carried out in which we manipulate the type of information displayed on a crisps package (a light claim versus no claim). We also manipulate the perspective taken by the participant. About half of all participants will watch a short movie in which they see another person (a woman) eating a portion of crisps from a package that has either a light claim on it or not. The other half of participants is requested to imagine that they have eaten the same portion of crisps themselves (either with or without a light claim). After watching the video or imagining the situation themselves, all participants are asked to rate the crisps on various attributes. They are also asked to rate the eating behaviour in terms of its relation to impulsiveness and self-control.

2 Theoretical background

Many studies have been done about how consumers understand, perceive, prefer and use nutrition and health information displayed on food packages (Grunert & Wills, 2007). Generally, when asked explicitly, many consumers indicate a preference for nutrition claims and information front of pack (Grunert, et al., 2007). When speaking about the actual purchase of a product, people are more willing to buy a product when there is a claim on it (Van Kleef, Van Trijp & Luning, 2005), especially when the claim relates to a personally relevant health problem. Aschemann-Witzel & Hamm (2010) showed that there can be an increase of about 10% of the sales volume, or an increase of attention from the consumers of 20%, to a product with a claim.

The last decades, quite a lot of research has been done on how health and nutrition claims may influence consumption. In paragraph 2.1, we review the studies that have been done in this area. In the next paragraph 2.2, we discuss consumer inference making about food product and eating behaviour from the actor versus observer perspective. Paragraph 2.3 attempts to integrate both streams of literature by coming up with hypotheses and a research model for our study.

2.1 Consumer (mis)understanding and interpretation of claims and the effect on food intake

People have to make food choices every day. Bublitz and colleagues (2013) showed that in the field of health decision-making, consumers act out of self-interest. Moreover, consumers try to make food choices based on what feels right to them, rather than really thinking about it. This is in line with the two-system view of Kahneman (2003), such that people process things peripherally; fast, automatic and effortless. In addition, if people are able to achieve a goal, they will be more satisfied than when they are not able to achieve this goal (Laran, 2010). Moreover, because of a decision process itself, people may be satisfied with their decisions and their goals. For example, the decision process of choosing a bag of light crisps instead of normal crisps. Thinking about what product you will choose, and then choose the light variant might cause people to be already satisfied. Just choosing to buy the healthier option already gives them a good feeling as if though they achieved the goal of choosing to be healthier.

On the next page we formed a table in which we put some key studies examining consumer understanding and interpretation of health and nutrition claims on food intake. The studies we put in this table were mostly about the effects of inferences as health and taste.

Table 1. Some key studies examining effects of health and nutrition claims on food intake

| <i>Study</i> | <i>Research aim and design</i> | <i>Key results</i> |
|---|--|--|
| Chandon & Wansink (2006) | <p>Study 1: Do low-fat nutrition labels increase consumption?</p> <p>Study 2: Why do low-fat nutrition labels increase intake? (in a lab the actual food intake increased)</p> <p>Study 3: Can objective serving-size information reduce the effects of low-fat labels? (granola consumption among moviegoers)</p> | <p>Study 1: The actual consumption increased, low-fat labeling increased the severity of the calorie underestimation (especially for overweight individuals).</p> <p>Study 2: Participants estimated the appropriate consumption amount higher if it had a low-fat label compared to a regular label, a low-fat label increased the perceived serving size and decreased the perceived calories.</p> <p>Study 3: Low-fat labeling reduces the estimated servings in a bag, normal-weight participants did not eat more when there was a low-fat label combined with objective serving size information, overweight participants ate more anyway.</p> |
| Ascherman-Wtazel & Hamm (2010) | This study aimed to understand whether consumers prefer foods with nutrition and health claims compared to the same products without such information (buying intention in interviews or hypothetical choice decisions in experiments without any time or budget constraint). | Products with a claim are preferred. Choice was influenced positively by the perceived healthiness, and influenced negatively by selection of a brand that is chosen habitually. |
| Grunert, Scholderer & Rogeaux (2011) | To understand the determinants of consumer understanding of health claims. Consumers were classified to be safe, risky or other (whether consumers are most likely to interpret a claim right or not). | Attitude to functional foods is the only direct predictor of claim understanding. People with a positive attitude towards functional foods are more likely to misinterpret a health claim (risky). Respondents with negative or neutral attitudes were more likely to be classified in the <i>other</i> category, which means they gave none or too vague answers. But most respondents were <i>safe</i> ; had the right interpretation of the health claim. |
| Ebneter, Latner & Nigg (2013) | Is less always more? The effects of low-fat labeling and caloric information on food intake, calorie estimates, taste preference and health attributions. | Participants underestimate the calorie content of low-fat-labeled food. With caloric information available, participants rated low-fat-labeled candy as better tasting. Participants also had more positive health attributions for low-fat-labeled food, independent of caloric information. |
| Provencher, Polivy & Herman (2009) | Perceived healthiness of food, investigates the effects of food-related beliefs about the healthiness of foods, restrained eating and weight salience (actual food intake during an ad libitum snack). | Dietary restraint and weight salience did not influence snack intake. Participants eat more if food is labelled as healthy than when it is seen as unhealthy. If participants received weight feedback before eating the product, restrained eaters rated the snack more negatively than unrestrained eaters. |
| Raghunathan, Walker Naylor & Hoyer (2006) | Four experiments were conducted with the aim to understand whether foods seen as unhealthy are also seen as more tasty. In particular, what is the effect of this so-called 'unhealthy =tasty intuition' on taste inferences, enjoyment, and choice of food products? (study 1,2 and 4: undergraduate students, study 3: invited adults for 'housewarming party'). | Results show that the less healthy a product is portrayed: the better the inferred taste, and the more enjoyed during consumption, and there is a greater preference for this product in choice tasks when a hedonic goal is more salient. |

Effects on health inferences

Several studies examined the effect of a claim or logo on healthiness rating of consumers (Aschemann-Witzel, et al., 2010; Grunert, Scholderer & Rogeaux, 2011). Results show that typically, products with a claim are preferred above products that do not have a claim (Aschemann, et al., 2010). Provencher, et al., (2009) also showed that people eat more of a product when it is regarded as healthy compared to when it was seen as unhealthy. In their study, the offered participants got either the 'healthy' snack or the 'unhealthy' snack. In fact it was the same snack, but it was presented to the participants as either healthy or unhealthy. Participants were then asked to rate the taste of the snack, by eating as many cookies as needed to achieve accurate ratings. Afterwards the researchers weighed how many grams of the cookies were eaten by each participant. Results show that people ate more of the 'healthy' product.

Consumption effects of claims or other health-related information are also referred to as 'halo' effects (Chandon, et al., 2007; Chandon, 2013). The halo effect refers to the tendency of individuals to overgeneralize, the "global assessment of a person can powerfully alter evaluations of particular attributes" (Nisbett & DeCamp Wilson, 1977). This means that people have a global assessment of a product, which is based on only particular attributes of that product. For example a low-fat claim on a product which might lead people to think that the product is generally healthier. For food products, the halo effect means that people rate "the product higher on other health attributes not mentioned in the claim" (Roe, Levy & Derby, 1999).

Negative nutrients (such as fat) -compared to positive nutrients, increase consumer's search, recall and choice activities (Balasubramanian & Cole, 2002). So if a claim has a focus on the unhealthy nutrients like fat, a consumer is more likely to elaborate more about this product.

Aschemann-Witzel, et al., (2010) showed that people think that a product with a claim is not only healthier than an alternative without the claim it is also seen as generally healthier. A health claim on a product will be especially important if it is related to a personally relevant health problem (Aschemann-Witzel, et al., 2010). When there is a low-fat claim on candy, the product is seen as healthier than regular labelled candy (Ebnetter, et al., 2013). When people see new information (like claims) they relate this information to information that is already in their memory (Grunert, et al., 2011). Due to a health claim there is a halo effect: people believe that the product is generally healthy, because of the positive affect caused by the health claim (Grunert, et al., 2011). Another possible effect that may occur is the magic bullet effect, which means that people attribute inappropriate health benefits to that product (Roe, et al., 1999). People generalize a health claim and think the product is generally healthy, while the claim is only about a specific benefit (Grunert, et al., 2011).

Effects on taste inferences

The less healthy a product is portrayed, the better the perceived taste of it. Also, the less healthy product variant is enjoyed more during the actual consumption, compared to a healthier option. Furthermore, when a hedonic goal is made more salient in choice tasks, people have a greater preference for the less healthy product (Raghunathan, Walker Naylor & Hoyer, 2006). So unhealthy is intuitively seen as tasty (Raghunathan, et al., 2006; Schuldt & Hannahan, 2013). Thus, consumers might think that products with a health or nutrition claim on it will be less tasty than products without a health or nutrition claim on it. Raghunathan, et al., (2006) showed that this is because of internal and external sources. They believe that this unhealthy is tasty intuition internally "is a specific manifestation of a more general principle". This means that internal there is some kind of inverse relationship between things that are healthy/nourishing/good for you and those that are enjoyable/fun and exciting. Externally, this is because of repeated exposure to views that are in line with the unhealthy is tasty intuition, through personal communication.

In addition, Westcombe and Wardle (1997) did research on whether personal factors mattered for the unhealthy = tasty intuition. Participants had to rank the tastiness of products which were either low-fat or normal-fat or high-fat while actually they contained the exact same amount of fat. They showed that participants who were not concerned about healthy food products rated low-fat products as less tasty than high-fat products. Opposite of this, participants who were highly concerned about healthy food products rated the high-fat products as the least tasty of all the products. This opposite might be a cause for how participants will rank the taste of normal and light crisps. But due to the unhealthy = tasty intuition, we expect that the normal crisps will be estimated as better tasting compared to the crisps with the light claim on it.

Effects on calorie estimations

The problem of obesity as described earlier is not because we burn less calories, but because of an increased calorie intake (Chandon, et al., 2007). Research of Chandon, et al., (2007) showed that people consumed more calories from a product that is labelled as low-fat compared to a product that is labelled as high-fat. Because of the health halo effect as described earlier.

Ebnetter, et al., (2013) showed that when there is a low-fat claim on candy, people underestimate the calorie content of that product. People estimate low-fat-labeled candy to contain fewer calories compared to regular-labeled candy. Also, the product is seen as healthier than regular labelled candy. They wanted to see whether this halo effect could be reduced by the display of calorie content. But, the effect of calorie labeling on food consumption remained still unclear. Similar, Jiang & Lei (2014) showed that people underestimate the caloric content of a food product with an unhealthy base, especially when there is a healthy topping on it, and they also eat more of this product compared to a product with a healthy base (no matter whether the topping is healthy or not healthy). Moreover, research of Chernev & Gal (2010) showed that “consumers tend to systematically underestimate the combined caloric content” such that people rather average than adding up calories of a combination of healthy and indulgent food products. A reason they give for this is that, as research has shown, consumers often categorize a food as either good (e.g. fruit, vegetables) or bad (e.g. chocolate, crisps, candy, pizza) for their health (Rozin, Ashmore & Markwith, 1996).

We expect that participants will underestimate the calorie content of light crisps. Because of the light claim they might think the product is generally healthier, and think the calorie content will be lower than it actually is.

Effects on consumption-related emotions

When people are exposed to an unhealthy but tasty food product, this may elicit an immediate desire to eat the food. However, this desire to indulge may conflict with other, more long-term health goals of the consumers. These conflicting feelings can be seen as having both positive and negative thoughts of the food at the same time (Okada, 2005). If someone does something impulsive, this can lead to the emotion guilt, which can lead “to a decision to be more circumspect at a next occasion” (Frijda, 2010). Guilt is when someone feels regret, if you wish you had behaved differently in that situations or make the bad deed undone (Sunghwan & Baumgartner, 2011). Sunghwan, et al., (2011) also showed that the guiltier someone feels, the more this person will be planning to reduce impulse buying. To justify eating an indulgent food product, consumers may seek justification to make the behaviour more acceptable. A health and nutrition claim may offer this justification in that it reduces anticipated conflict. This explanation has been brought up by Chandon, et al., (2006). So it might be that participants will feel less guilty while imagining eating the light crisps compared to eating the normal crisps. We expect that participants will feel more negative emotions while imagining eating the normal crisps compared to the light crisps.

Research has shown that stress induces overeating (Morley, Levine & Rowland, 1983; Oliver & Wardle, 1999). Oliver, et al. (1999), showed that snacking during stress overall increased regardless of dieting status. In contrast, foods as fruit and vegetables, meat and fish decreased in periods of stress. Many research has been done in negative emotions and overeating. Evers, Adriaanse, de Ridder & Witt Huberts (2013) showed that positive emotions can have an effect on food intake as well. Positive feelings (happiness, pleasure, joy, cheer, contentment and satisfaction) resulted in more caloric intake than no emotions. Positive emotions resulted in the same extent as negative emotions (anger, sadness, fear, worry and shame) to evoked caloric intake. They also showed that as a result from positive emotions compared to negative emotions, more frequently snacks were consumed. Cools, Schotte & McNally (1992) showed similar results. In their research they let respondents either watch a travel program (neutral), or a comedy film (positive), or a horror film (negative) meanwhile respondent's food intake was measured. Results of the study showed that emotional arousal (negative as well as positive) no matter with what valence, may lead to overeating among restrained eaters. We expect that a light claim on a product will cause the feeling of more emotions. These emotions might result in eating more of the indulgent food product.

2.2 How judgements differ depending on being an observer or actor

In this research participants do not only imagine that they will eat something themselves, they will also watch someone else eating the indulgent food product.

Although many people believe that they see things objectively, in reality almost everyone is susceptible to all kinds of cognitive and motivational biases. Research showed that people think that others are much more sensitive for cognitive and motivational biases than they are themselves (Pronin, Lin & Ross, 2002). People have these biases because they do not see events and issues objectively; we see them through our own views of the world (Pronin, et al., 2002). This is because of the so-called observer–actor difference (Jones, et al., 1972). If an actor will do something himself/herself, then this behaviour is performed because of the surroundings, the situation will be the focus of attention. While if someone else does something, people will say it is a personal characteristic of that individual. Furthermore, others see issues and events through their own interests, history, political ideology and they see themselves in a positive light. Contrary, we think that we see things objectively and thus are not a victim to these biases. This also has to do with the difference between the actor and the observer (Jones, et al., 1972). If the person will do something, the situation will be the cause of it, while if someone else does something it will be a personal characteristic.

It has been suggested that people do this because they attempt to protect their self-esteem (Blass & Kaplowitz, 1990). Basically, people tend to take personal credit for success and take less or no responsibility for failure. Related to this, the actor-observer discrepancy is “more frequently involved blameworthy than praiseworthy acts” (Jones, et al., 1972). So it is mostly with negative behaviours. Moreover, people have strong and negative judgments about others in the case of eating unhealthy foods en too much food (Steim, et al., 1995).

Self-control is very important human characteristic. Eating unhealthy food products is strongly related to self-control and the perceptions of it. Low self-control can lead to physical health symptoms, higher self-control may lead to less physical health symptoms (Boals, van Dellen & Banks, 2010). This means that people with more self-control have a probability of getting less physical health symptoms. Furthermore, “lower self-control is associated with unhealthy coping strategies.” People have severe stigma towards obesity (Puhl & Heuer, 2009). Moreover, obese people are seen as lazy and people think they have a lack of self-discipline. Ebnetter, Latner & O’Brien, (2011), showed that obesity is not only seen as having lack of self-discipline, but also a lack of social support. Other research showed that people with obesity are more impulsive than people who are lean, and people who are impulsive eat more than people who are less impulsive (Nederkoorn, Guerrieri, Havermans, Roefs & Jansen, 2009)

If people eat bad foods (such as crisps) they are rated as less moral compared to people who eat good foods (Steim, et al., 1995). Steim, et al., (1995) also showed that people who eat good foods are rated as more active, fitter, thinner, less fat, more attractive, and more likable, compared to people who eat bad foods. So, if you see someone eating crisps, you will probably think that this person is less healthy.

2.3 Model en hypotheses

Consumers prefer products with a claim on it more, compared to regular labelled products. They tend to think the product is generally healthier, and think it contains fewer calories than it actually does. This is due to the earlier described halo effect, as a result of this people might actually eat more of the product. When shopping in the supermarket people do not have much time to think about the products, so they rely on simple cues (like a low-fat label) to make a decision. This is because they process information peripherally; fast, automatic and effortless, which is in line with the two-system view (Kahneman, 2003). But when people get feelings of guilt and regret, they will be planning to reduce their impulse buying (Sunghwan, et al., 2011). So in this study, participants are exposed to a bag of crisps varying in whether a light claim is attached (light claim versus no claim).

The actor-observer difference is of importance, to get a better look into whether people rate someone else as having less self-control compared to you. Also it is interesting to see whether aspects linked to a light claim will be less for someone else than it will be for you. For this reason we vary the perspective that has to be taken by participants; eating crisps themselves versus seeing someone else eating.

Hypothesis 1

As described earlier, people think that a product with a health claim on it is generally healthier. They also think that a product which is claimed as healthy, is less tasty due to the unhealthy = tasty intuition (Raghunathan, et al., 2006; Schuldt & Hannahan, 2013). Also, people tend to underestimate the calories in a product with a health claim on it. Furthermore, consumers think that a product with a health claim on it contains more serving sizes. This leads us to the first hypothesis.

Compared to a portion of crisps from a regular package, the same portion of crisps from a package with a 'light' claim is considered to be

- *healthier*
- *less tasty*
- *lower in calories*
- *more appropriate in amount*

Hypothesis 2

As described earlier, people make different inferences when being an actor or an observer. If you see someone else eating crisps, you will think it is a personal characteristic of that person to eat unhealthy (this has to do with their self-control). While if you imagine eating the crisps yourself, you will think it is because of the surroundings, because of the situation.

Compared to watching another individual eating a portion of crisps, imagining eating the same portion of crisps yourself is seen as

- *less representative of an unhealthy eating style*
- *less the result of having less self-control (or being more impulsive by nature)*

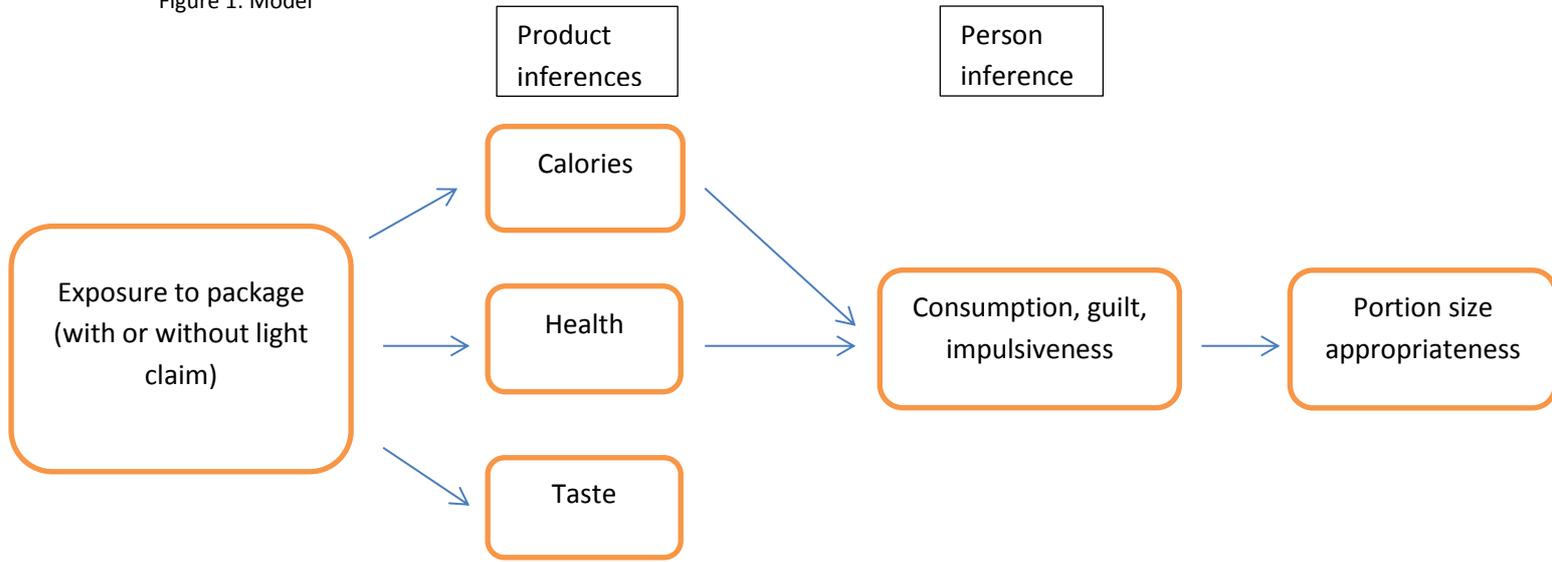
Hypothesis 3

We further predict that the negative inferences raised by the light claim are stronger in the case of seeing someone else eating the crisps. As discussed in section 2.2, individuals tend to see negative events (such as eating a substantial portion of crisps) different depending on who they judge. Eating crisps themselves is more likely to be seen as an occasional treat and not the result of unfavourable personality traits such as being an impulsive eater. In contrast, watching someone else eating crisps with a light claim on it may activate negative inferences and make them stronger.

Compared to imagining eating the crisps yourself we expect that: negative inferences (such as impulsiveness) raised by the light claim are stronger when you see someone else eating crisps.

Below is the model that shows the aspects of our research.

Figure 1: Model



3 Method

3.1 Participants

In this study, participants were recruited using a database of individuals who gave permission to be sent an e-mail with study invitations. In addition, participants were also approached personally by the researcher by sending e-mail and using social media. In total, 207 participants filled in the questionnaire. Participants were excluded if: participants took around 1 hour of time or more, because other factors could have an influence on their answers. One participant confessed to be eating crisps at the time, which may have influenced the answers, and was left out as well. Also, one participant said that the movie did not play properly, and she could not watch it over, so we excluded her as well. We excluded 14 participants, this left a total of 193 participants in the analysis (44 male, 149 female, mean age = 36.54 years). The experiment was administered online using Qualtrics survey software. Consequently, participants could fill in the questionnaire at any time they wanted. Participants could receive gift certificates (two of € 10,-) in return for participation.

3.2 Design

In this study, we employed a between subjects design in which we manipulated two factors. First we varied the food product that participants were exposed to; either they were exposed to light crisps, or to regular crisps. Second, we manipulated the perspective on the situation in which the crisps was consumed. Participants were either watching a movie in which they saw a woman eating crisps, or they saw a movie in which they were instructed to imagine themselves that they were eating crisps. Table 2 shows the 2 by 2 design of the experiment. Participants were randomly assigned to one of the four conditions.

Table 2. 2x2 Design

| | | Perspective | |
|---------|-----------------|-----------------------------------|--|
| | | Seeing someone else eating crisps | Imagine eating crisps yourself |
| Product | 'Light' crisps | Movie of woman eating crisps | Show pictures of packaging en serving size |
| | 'Normal' crisps | Movie of woman eating crisps | Show pictures of packaging en serving size |

We selected crisps as this is a popular snack which is available in both regular and light versions.

3.3 Procedure

After providing informed consent, participants were asked to watch a small movie of a person eating light or regular crisps or a movie with instructions to imagine eating light or regular crisps themselves. After this movie, all the participants filled out a manipulation check and completed measures of how good the product seemed to them, perceived portion size, self-control, how much was eaten, feelings while eating crisps, and general questions (about age, sex, length, weight, education) and about restrained eating style (see appendix 1). Finally, participants were thanked for filling in the questionnaire and were linked to another questionnaire in which they could fill in their e-mail. Then they could win a 10 euro gift card, or letting know they were interested in the results of the study and if they can be asked to be participants in other questionnaires for Wageningen University. The questionnaire was made in Qualtrics (qualtrics.com). The four conditions were randomly assigned to the participants.

3.3.1 Development of movie to manipulate perspective

In the other-perspective conditions, participants watched a movie in that featured a woman who comes home after a long and tiring day at work. The total length of this movie is 103 seconds. The confederate in the video comes home, puts her bag on the ground, and takes off her coat. She walks to the kitchen, gets a bowl from the cupboard, and opens the bag of crisps. This transparent glass bowl is then filled with crisps. The portion size is ± 60 grams; 2 single person portion sizes. The woman leaves the kitchen and walks into the living room. Here she sits down relaxed on the couch and eats the entire bowl of crisps.

In the self-perspective conditions, participants watched a movie in which they had to imagine they came home after a long and tiring day at work. The total length of this movie is 66 seconds. You had to imagine, you put your bag on the ground, and you take of your coat. You walk into the kitchen; get a bowl from the cupboard. You fill the transparent glass bowl with crisps (portion size and bag of crisps are showed in a bit). You sit down relaxed on the couch and eat the entire bowl of crisps. Then participants saw the bag of crisps and the portion size in the glass bowl and had to take a minute to imagine themselves in this situation. Across all conditions, the same background music was played

3.4 Measures

First, people got some information what the questionnaire would be about, without giving away the actual purpose. Also how long it would take them to finish the questionnaire, and what would be in it for the participants, and that it would be anonymous.

Manipulation check

After participants watched the movie, there was a manipulation check, to see whether people actually did watch the entire movie. People had to describe what the bowl that contained the crisps looked like.

Perceived quality of crisps

Then people were asked to immerse themselves to the movie and answer some questions, a picture of the package and the portion size eaten were showed. On a Likert scale (1 = completely disagree, 2 = disagree, 3 = disagree a little, 4 = neutral, 5 = agree a little, 6 = agree, 7 = completely agree) people had to rate the extent to which they agree with the following statements: ‘the crisps look tasty’, ‘the crisps look as if though you can enjoy them a long time’, ‘the quality of the crisps seems OK.’

Perceived portion size (appropriateness) and caloric inferences

The next questions (again with pictures of the package and portion size) were about portion size appropriateness. Perceptions of portion size appropriateness were measured. Participants were reminded that the woman/you ate the entire bowl of crisps. Participants had to use a slider to indicate what they thought of the amount of crisps eaten (0 = way to less, 50 = exactly enough, 100 = way to much). Also, they had to estimate how much calories they thought there were eaten, and how many grams they think there were eaten.

Also, people had to rank on the same Likert scale whether: ‘the portion seems to be large’, ‘this is a normal portion for one single person’, ‘the crisps seem caloric to me’, ‘the crisps seem fat to me’, ‘the crisps seem healthy to me’ (Van Kleef, Kavvouris & Van Trijp, under review).

Self-control

Then people had to think about the movie again (no picture showed) and tell how much they agreed on questions about self-control. Again on a Likert scale from 1 until 7. In two conditions about the woman eating crisps, and in the other two conditions about imagining eating the crisps yourself. ‘The woman is/I am good in resisting temptations’, *‘the woman does/I do things that are bad for her/me if they are fun’*, *‘the woman has/I have troubles saying no’*, ‘the woman eats/I eat healthy food products in general’, *‘the woman/I cannot resist the crisps’*, *‘the woman has/I have troubles stop eating the crisps’*, ‘the woman had/I have good self-control’, *‘the woman is/I am impulsive’*, ‘the woman eats/I eat an appropriate portion size’, ‘the woman eats/I eat a typical single person portion size’, *‘the woman eats/I eat a lot of crisps’*, ‘eating this amount of crisps is an exception for the woman/me’, *‘eating this amount of crisps is a habit for the woman/me’* (Puri, 1996). The items that are in *italics* had to be reframed to form a scale. With a cronbach’s alpha of 0.87 this was stated to be a reliable scale.

Emotional state

Then there were some questions on the feelings of the woman while eating/you while imagining eating the crisps. Again on the same Likert scale the following feelings were measured: ‘pleasurable’, ‘blue’, ‘stressed’, ‘relaxed’, ‘satisfied’, ‘angry’, ‘content’, ‘frustrated’, ‘happy’, ‘guilty’, ‘shamed’, ‘regret’, ‘enjoying’ (Ramanathan & Williams, 2007). We wanted to form a scale for positive feelings and negative feelings. The scale of positive feelings contained the items: pleasurable, relaxed, satisfied, content, happy and enjoying. With a cronbach’s alpha of 0.88 this was stated to be a reliable scale. The scale of negative feelings contained the items: blue, stressed, angry, frustrated, guilty, shamed and regret. With a cronbach’s alpha of 0.87 this was stated to be a reliable scale.

Participants were also asked to indicate how much they liked crisps in general and how frequently they consumed crisps on the same Likert scale: 'I like crisps', 'I eat crisps often', 'I buy crisps often'. They also had to rank how hungry they felt at the moment (0 = not hungry at all, 100 = extremely hungry). Also, participants had to tell what they think the goal of the study is (if they would know exactly what it is about, we would have to question their answers).

Restrained eating

Restrained eating style was assessed using the scale of Van Strien, Frijters, Bergers & Defares (1986). The questions were on another scale: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often; 'If you have gained a little, do you eat less than normally?', 'Do you try to eat less during meals, then you actually would want to?', 'How often do you reject food or drinks because you are afraid to gain weight?', 'Do you keep track exactly what you eat?', 'Do you eat products that make you lose weight on purpose?', 'When you have eaten too much, will you eat less the next days?', 'Do you eat less on purpose to prevent gaining weight?', 'How often do you try not to eat a snack because you are watching your weight?', 'Do you take into account your weight while eating?'. With a cronbach's alpha of 0.89 this was stated to be a reliable scale.

Demographics

Then there were some general questions about their age in years, gender, length in centimetres and weight in kilograms (so BMI could be calculated by: $\text{weight in kilograms}/(\text{length in meters}^2 \cdot \text{length in meters})$), and their highest achieved (or still learning) education (see Appendix 1).

Data analysis

All the data were put in a file in SPSS. First of all, we did randomisation checks; paragraph 4.1, to see whether the conditions were distributed randomly. After this we tested the hypotheses: *H1 Compared to a portion of crisps from a regular package, the same portion of crisps from a package with a 'light' claim is considered to be: healthier, less tasty, lower in calories, more appropriate in amount. H2 Compared to watching another individual eating a portion of crisps, imagining eating the same portion of crisps yourself is seen as: less representative of an unhealthy eating style, less the result of having less self-control (or being more impulsive by nature). H3 Compared to imagining eating the crisps yourself we expect that: negative inferences (such as impulsiveness) raised by the light claim are stronger when you see someone else eating crisps.* We did ANOVAs and MANOVAs (with claim and perspective as independent variables) to see if there were any effects; on the estimated portion size: paragraph 4.2, on the evaluation of crisps: paragraph 4.3, on perceived self-control: paragraph 4.4, and on emotional state: paragraph 4.5.

4 Results

4.1 Randomisation check

To check whether age was randomly varied across the conditions, we performed an ANOVA with age as a dependent variable and our experimental manipulations as independent variables. Age did not differ significantly between the light claim and no claim condition ($F(1,191) = 2.07, p = 0.15$), and between the woman-perspective and self-perspective condition ($F(1,191) = 2.40, p = 0.12$). Similar randomisation checks were performed for BMI, restrained eating and feelings of hunger. The results show that for BMI there were no differences between claim or no claim conditions ($F(1,191) = 0.67, p = 0.41$), nor between the two perspectives conditions ($F(1,191) = 0.00, p = 0.96$). The results show that for restrained eating there also were no differences between claim or no claim conditions ($F(1,191) = 0.57, p = 0.45$), nor between the two perspectives conditions ($F(1,191) = 1.61, p = 0.21$).

To check whether feelings of hunger did not differ between the conditions we did an ANOVA. We found that between the condition claim or no claim there was a significant difference ($F(1,191) = 6.94, p = 0.01$) such that participants in the condition who saw the crisps with the light claim felt less hungry ($M = 24.90$) compared to people who saw a product without the claim ($M = 34.26$). There was no significant difference in how hungry participants were between the different perspectives conditions ($F(1,191) = 0.20, p = 0.65$).

The question about how hungry participants felt was asked after the questions about the movie (what the bowl looked like, how tasty etc. the crisps looked, the questions about the portion size eaten, the questions about self-control, and the questions about the positive/negative feelings, and whether you like crisps). While the question was at the end of the questionnaire, we do not know whether these differences between the conditions are because of the manipulation or if they were not divided randomly across the conditions.

Since there was a difference between the conditions, we did additional analyses for all the dependent variables including feelings of hunger as a covariate. However, correcting for differences in feelings of hunger did not substantially affect our findings and we therefore report our main analyses without covariates. (Only the effect of perspective on evaluation of crisps (the crisps look as if you can enjoy them for a long time) changed slightly, becoming marginally significant rather than significant when correcting for feelings of hunger ($F(1,188) = 3.71, p = 0.06$).

To check whether gender was not distributed differently between the conditions, we performed a chi-square analysis with gender and the claim and perspective conditions. Gender distribution was equal among the conditions light claim and no claim ($\chi^2(1) = 1.70, p = 0.19$) and between the woman-perspective vs self-perspective ($\chi^2(1) = 2.81, p = 0.09$).

4.2 Effect of claim and perspective on estimated portion size

To test whether there were any effects of the light claim on the package that participants saw and the perspective they took on how they rated the portion size, we did a MANOVA.

Portion size

There were no significant differences between the light claim and no claim condition in how large participants viewed the portion ($F(1,189) = 0.02, p = 0.89$), whether they thought this was a normal single person portion ($F(1,189) = 0.01, p = 0.91$), whether they thought the amount of crisps eaten was appropriate ($F(1,189) = 0.00, p = 0.97$), nor on the estimated eaten grams ($F(1,189) = 2.56, p = 0.11$).

Which perspective participants took did not affect how large participants viewed the portion ($F(1,189) = 0.10, p = 0.75$), whether they thought the amount of crisps eaten was appropriate ($F(1,189) = 0.00, p = 0.98$), nor on the estimated eaten grams ($F(1,189) = 2.59, p = 0.11$), or whether the crisps seemed fat to them ($F(1,189) = 0.29, p = 0.59$).

Nor were there any interaction effects between claim and perspective in how large participants viewed the portion ($F(1,189) = 0.02, p = 0.89$), whether this is a normal single person portion ($F(1,189) = 0.04, p = 0.84$), whether they thought the amount of crisps eaten was appropriate ($F(1,189) = 0.38, p = 0.45$), nor on the estimated eaten calories ($F(1,189) = 0.58, p = 0.45$), or whether the crisps seemed fat to them ($F(1,189) = 0.19, p = 0.66$). For perspective we did see a marginal significant effect such that people thought the portion eaten was a normal single person portion ($F(1,189) = 2.74, p = 0.10$) such that if participants had to imagine eating themselves ($M = 3.84$) they thought the portion size was more normal than if they saw the woman eating crisps ($M = 3.47$). This finding confirms our second hypothesis that (even though the portion is a two person portion) you think that for you it is more normal to eat a single person portion size, than for someone else.

There was an interaction effect of claim and perspective on the estimated eaten grams ($F(1,189) = 6.58, p = 0.01$). In order to examine this interaction effect more closely we looked at the effects of perspective in each of the two claim conditions. The perspective participants took affected estimated eaten grams ($F(1,98) = 8.34, p = 0.01$) in the light condition, such that they thought that if they saw the woman eating light crisps ($M = 76.19$) participants thought she ate less grams than if the participants had to imagine eating the crisps themselves ($M = 100.38$).

The perspective participants took did not affect the estimated eaten grams ($F(1,91) = 0.48, p = 0.49$) in the no claim condition.

We also looked at the effects of claim on estimated eaten grams in each of the perspective conditions. Whether there was a claim on the package had no effect in the condition when participants saw the woman eating crisps ($F(1,95) = 0.45, p = 0.50$). But there was an effect of claim for the condition when participants had to imagine eating the crisps themselves ($F(1,94) = 8.91, p = 0.00$), such that they thought the portion of normal crisps contained less grams ($M = 76.25$) than the portion of light crisps ($M = 100.38$).

Caloric content

There were no significant differences between the light claim and no claim condition on the estimated eaten calories ($F(1,189) = 0.07, p = 0.79$).

Which perspective participants took did not affect the perceived caloric content of the crisps ($F(1,189) = 1.83, p = 0.18$). Nor were there any interaction effects between claim and perspective on the perceived caloric content of the crisps ($F(1,189) = 0.41, p = 0.52$).

There was an effect of the claim on the perceived caloric content of the crisps ($F(1,189) = 15.06, p = 0.00$) such that if participants saw the normal crisps ($M = 5.88$), they thought the crisps contained more calories than participants who saw light crisps ($M = 5.23$). This is different from the item above because it was not an actual number of calories that people had to estimate, but whether the crisps

seemed caloric to them. This finding confirms our first hypothesis that the light crisps are estimated to be lower in calories.

There was a marginally significant effect of perspective on the number of estimated eaten calories ($F(1,189) = 3.36, p = 0.07$) such that if participants saw the woman eating ($M = 492.01$) they estimated the consumed calories lower than if they had to imagine eating the crisps themselves ($M = 575.83$). We had expected that imagining eating crisps yourself would be seen as less representative of an unhealthy eating style than when you see someone else eating crisps (H2). In line with that we would have expected that the number of calories estimated for someone else would be larger than for yourself. However the findings show the opposite effect.

There was an effect of claim on whether the crisps seem fat to people ($F(1, 189) = 11.74, p = 0.00$) such that if participants saw the normal crisps ($M = 5.63$), they thought the crisps contained more fat than participants who saw light crisps ($M = 5.01$). This finding confirms our first hypothesis that light crisps are expected to be healthier.

4.3 Effect of claim and perspective on the evaluation of crisps

To test whether there were any effects of the light claim on the package that participants saw and the perspective they took on how they evaluated the crisps, we did a MANOVA. There were no effects of claim on how participants evaluated how good the quality of the crisps seemed to them ($F(1,189) = 0.47, p = 0.49$), nor on whether the crisps looked like as if you can enjoy them for a long time ($F(1,189) = 0.93, p = 0.34$), nor on whether the crisps (in their opinion) looked tasty ($F(1,189) = 0.22, p = 0.64$). There was an effect of perspective on whether the crisps looked like as if you can enjoy them for a long time ($F(1, 189) = 3.92, p = 0.05$) such that if participants had to imagine eating crisps themselves ($M = 4.53$) they thought you could enjoy the crisps longer than if they saw the woman eating crisps ($M = 4.07$).

There also were no effects of perspective on how participants evaluated how good the quality of the crisps seemed to them ($F(1,189) = 2.59, p = 0.11$), nor on whether the crisps (in their opinion) looked tasty ($F(1,189) = 1.17, p = 0.28$). There also were no interaction effects on how participants evaluated how good the quality of the crisps seemed to them ($F(1,189) = 0.04, p = 0.83$), nor on whether the crisps looked like as if you can enjoy them for a long time ($F(1,189) = 0.55, p = 0.46$), nor on whether the crisps (in their opinion) looked tasty ($F(1,189) = 0.37, p = 0.54$).

4.4 Effect of claim and perspective on perceived self-control

To test whether there were any effects of the light claim on the package that participants saw and the perspective they took on perceived self-control, we did an ANOVA. There was no effect of claim on the perceived self-control ($F(1,189) = 1.14, p = 0.29$). There was no interaction effect on the perceived self-control ($F(1,189) = 0.19, p = 0.67$).

There was an effect of perspective on self-control ($F(1, 189) = 42.81, p = 0.00$) such that if people had to imagine eating crisps themselves, they rated themselves as having more self-control ($M = 4.29$) than the woman eating crisps ($M = 3.46$). This finding is in line with our second hypothesis; eating crisps is perceived to be less representative of an unhealthy eating style for yourself than for someone else. Also, it is perceived to be less the result of having less self-control (or being more impulsive by nature) when you are eating crisps, compared to someone else eating crisps.

4.5 Effect of claim and perspective on emotional state

To test whether there were any effects of the light claim on the package that participants saw and the perspective they took on emotional state, we did a MANOVA. There were no effects of claim on positive feelings while eating the crisps ($F(1,189) = 1.63, p = 0.20$), nor on negative feelings while eating the crisps ($F(1,189) = 0.58, p = 0.45$). There also was no interaction effect on positive feelings while eating the crisps ($F(1,189) = 0.07, p = 0.79$), nor on negative feelings while eating the crisps ($F(1,189) = 0.064, p = 0.80$).

There was an effect of perspective on positive feelings while eating crisps ($F(1,189) = 11.33, p = 0.00$) such that if people had to imagine eating crisps themselves, they had less positive feelings ($M = 4.71$) while eating the crisps than what they thought the feelings of the woman were ($M = 5.19$) while eating the crisps.

Similarly there was an effect of perspective on negative feelings while eating crisps ($F(1,189) = 10.23, p = 0.00$) such that if people had to imagine eating crisps themselves, they had more negative feelings ($M = 3.23$) while eating the crisps than what they thought the feelings of the woman were ($M = 2.73$) while eating crisps.

5 Discussion

Overweight and obesity are huge problems nowadays; they have large consequences for public health. If overweight and obese people lose weight, risk factors for illnesses as diabetes and cardiovascular disease are reduced (Pi-Sunyer, et al., 1998). Particularly unhealthy food choices and too much energy intake are responsible for the increase of overweight (Speakman, et al., 2010). But people like these unhealthy products, so healthier alternatives of these products, such as low-fat or light, are offered. However, people think these products are generally healthier and might even eat more of it because of the so-called health-halo (Chandon, et al., 2007; Chandon, 2013). Because the product looks healthier to them, they think you can eat more of it.

In this research we wanted to look at whether consumer perceptions of appropriate portion sizes of crisps change when there is a light claim attached to the food package. We also focused on supposed underlying mechanisms explaining the potential changes in the appropriateness of a particular portion. Does this change because of perceived healthiness, taste or calorie estimates, or does a light claim reduce consumers' feelings of guilt after eating the crisps. This brought us to our first hypothesis; that a product with a light claim on it is considered to be: healthier, less tasty, lower in calories and more appropriate in amount. In addition we examined *who* was eating the crisps: a woman eating crisps versus imagining eating the crisps yourself. Because there might be an actor-observer difference there also might be a self-serving bias: if you eat the crisps it will be because of the situation you are in, while if the woman is eating crisps it is because this is seen as a personal characteristic of that person. Mostly, this is with negative behaviours, such as self-control. This brought us to the second hypothesis which said that you think you have more self-control than someone else while eating the crisps. And the third hypothesis which was about having stronger negative inferences for seeing someone else eating crisps compared to imagining eating the crisps yourself. We found some significant effects for our hypotheses.

Similar to our expectations about the light claim, the perceived caloric content of light crisps was lower than normal crisps. This might not be really appropriate, because the difference of the caloric content between 30 grams of light crisps (144 kcal) en 30 grams of normal crisps (168 kcal) is not very large; people might think that a product with a light claim contains substantially less calories than it actually does. Participants did not get this information, they only saw a light claim (or not). This shows that in line with Aschemann-Witzel, et al., (2010) people think the product with a light claim is healthier. Normal crisps seemed more fat to the participants than light crisps (30 grams normal crisps contains 11 g fat and 1.1 g saturated fat, 30 grams light crisps contains 6.4 g fat and 0.7 g saturated fat). This shows that people probably interpreted the claim right. This is in line with research of Grunert, et al., (2011), they showed that most consumers interpret claims right.

We did not find effects for whether the product with the light claim on it is seen as less tasty. It could be that there were people who were highly concerned for their health, and rated the normal crisps as the least tasty (Westcombe, et al., 1997). Because as Westcombe, et al (1997) showed, if people are highly concerned for their health, they rate the least healthy product as least tasty. If many participants who are highly concerned for their health would be in the group without the claim, they might have been a reason for us not to find any effect for the tastiness of the crisps. By this they might have evened out the effect of light crisps to be less tasty.

We also did not find any effects for whether light crisps were more appropriate in amount than normal crisps. We expected this because people think that because of a claim that a product is healthier, thus you can eat more of it because of the so-called health halo (Chandon, et al., 2007).

The second hypothesis about the perspective was supported by the results such that people thought they had more self-control while imagining eating crisps themselves than the woman had while eating the crisps. Also if people had to imagine eating the crisps themselves, the portion seemed more normal than if they saw the woman eating crisps. This might mean that they think that their own eating behaviour is less representative of an unhealthy eating style. This lower self-control for the other means there actually might have been an actor-observer difference (Jones, et al., 1972). People think they eat unhealthy because of the situation, while the woman does it because it is a personal characteristic. People might do this to try to protect their self-esteem (Blass, et al., 1990). Furthermore, people might think this woman has more unhealthy behaviours because of the lower self-control (Boals, et al., 2010). Because people with lower self-control can be seen as showing more unhealthy behaviours compared to people who are expected to have more self-control.

Related to this we found that perspective had an effect on the estimated portion size, the caloric content and one of the aspects to measure taste. In the conditions for the light crisps, people thought the woman ate less grams of crisps than if you had to imagine eating these crisps yourself. Also, if people saw the woman eating crisps, they thought she had eaten less calories compared to when you had to imagine eating the crisps yourself. For taste we found there was a significant effect for one aspect. If people had to imagine eating the crisps themselves, they thought they could enjoy the crisps for a longer time than if they saw the woman eating the crisps. This might be explained by feelings of guilt. You feel guilty for eating the crisps, but to reduce this you tell yourself you really enjoyed the crisps so it was worth it (Belei, et al., 2012). Furthermore people who had to imagine eating crisps themselves, had less positive feelings while eating the crisps than they thought the woman had while eating the crisps. Moreover, if people had to imagine eating crisps themselves, they had more negative feelings while eating the crisps than the woman had while eating the crisps. As expected people felt more negative emotions while imagining eating the crisps themselves.

For the third hypothesis we did not find any results. We thought that negative inferences (such as impulsiveness) raised by the light claim would be stronger in the case of seeing someone else eating crisps.

Besides effects that we expected, we also found another effect. If people had to imagine eating the crisps themselves, they thought the portion that was eaten of normal crisps contained fewer grams than the light crisps. This might be explained by the health halo, if it's healthy you can eat more, so people actually expect the amount to be bigger (Chandon, et al., 2007; Chandon, 2013).

Limitations and suggestions for future research

Feelings of hunger differed between the conditions, such that participants in the condition who saw the crisps with the light claim felt less hungry compared to people who saw a product without the claim. While this question was at the end of the questionnaire, we do not know whether these differences between the conditions are because of the manipulation or if they were not divided randomly across the claim or no claim conditions. Maybe if this question would be asked right after the manipulation and at the end of the questionnaire, an answer could be given what would be the cause for this feeling of hunger. In future research this might be an option to try to understand this.

In this research, people did not really eat the crisps but had to imagine eating the crisps. This might have been a reason for the fact that we did not find effects for whether the product with the light claim on it is seen as less tasty. Maybe if participants had really eaten the product, there would have been an effect for taste. If participants really eat the product, they can probably better tell what they think about the taste of a product. So in further research it might be better if participants actually eat the product. Also, there were only three questions to measure taste. The questions to measure taste were about whether participants thought the quality of the crisps were good, whether they thought they could enjoy the crisps for a long time and whether the crisps seemed tasty to them. These questions might not have been enough to really measure any difference, or they could have been too vague for participants. They might not have been specific enough to measure the aspect of taste. So in future research maybe questions about the saltiness and how crispy the product is can lead to results for taste. Also, we only had the taste 'paprika' crisps and it might be that people do not really like this flavour of crisps. This might have been another reason for not finding any effect for taste. In further research maybe different kinds of flavours can be used, such as 'naturel' crisps.

Since participants did not really eat the crisps but had to imagine eating them, it might have been a reason for not finding any results for the third hypothesis. Finding inferences is hard when people do not really eat the actual product but only imagine things about it. Further research should be done to see if there could be any effect. It might be better if participants actually eat the product, then maybe results will be found for the negative inferences raised by the light claim when seeing someone else eating the crisps compared to eating the crisps yourself.

Similar to our expectations, the perceived caloric content of light crisps was lower than normal crisps. This shows that people think the product with a light claim is healthier. But to get better results for this, in further research it might be better to also ask questions about the sugar and fat content. If these aspects are measured, it might lead to more results for the expectation that a product with a light claim is perceived to be healthier compared to a product without a claim. Also, if people really eat the crisps, they might have more feelings about the healthiness of the product compared to only imagining eating the crisps. So in further research it might be better if participants actually eat the product. Also, maybe people think different kinds of flavours of crisps contain more or less calories. In further research maybe different kind of flavours of crisps can be used.

Another limitation might be that there was only one portion size of crisps. We did not find any effects for whether light crisps were more appropriate in amount than normal crisps. Maybe different kind of portions of crisps can lead to results for this aspect. Perhaps the portion shown seemed small or large to participants. In further research, maybe different kind of portions of crisps can lead to results for this aspect. If people see more portion sizes (for example 30 grams, 60 grams and 90 grams) they might have less trouble with interpreting the size. If they can interpret the size easier, then they might have a different opinion for whether the amount is appropriate or not. So in further research it might be better if different kind of portions will be used. Also, people might think that for example 'naturel' crisps are healthier and might be a more appropriate amount of crisps. So in further research maybe different kind of flavours of crisps can be used.

In this research people had to imagine eating a fixed amount of crisps. We expected that a light claim on a product would result in more emotions. We also expected that this might be a cause of eating more of the crisps, but of course this can only be measured when people would actually eat the crisps. For this research participants had to imagine eating an exact amount of crisps not choosing the amount to eat themselves and not really eating the crisps themselves. In further research participants should actually eat crisps and not only imagining eating the crisps. Also, they should be able to eat as much as they want, not a fixed amount of crisps. Another aspect might be the chosen flavour of crisps; maybe people feel different kind of emotions for different flavours of crisps. So, in future research different kind of flavours can be used.

Actually eating the product and eating different kind of flavours of crisps might lead to different effects for the estimated caloric content. If people actually eat the product they maybe think the eaten caloric content is higher or lower compared to only imagining eating the crisps. Also, people might think that a flavour such as 'naturel' is healthier and contains fewer calories than it actually does. Different kind of portion sizes also might lead to different kind of estimated calories the portion contains. So, in future research actually eating the product, different kind of flavours and different kind of portion sizes might lead to different effects for the estimated caloric content.

These aspects might also have effects for the effects of self-control. Maybe a flavour such as 'naturel' crisps is seen as healthier. People might think you have more self-control when eating a healthier flavour such as naturel crisps. Also, if people see different kind of portion sizes they might think different about the self-control. So in further research different kind of flavours and different kind of portion sizes might lead to different effects for self-control.

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Appendix 1: Questionnaire

1. Dank u wel dat u mee wilt doen aan mijn onderzoek! Mijn naam is Celine Simons en voor mijn bachelor scriptie voor Wageningen University doe ik onderzoek op het gebied van consumentengedrag. Het invullen van de vragenlijst zal ongeveer 10 minuten duren. Er zijn geen goede of foute antwoorden, wit u invullen wat als eerste bij u opkomt? Het onderzoek is uitsluitend voor academische doeleinden, en er zijn geen commerciële bedrijven bij betrokken. U krijgt voor dit onderzoek een willekeurig nummer toegewezen, en de door uw verstrekte gegevens worden uitsluitend onder dit nummer opgeslagen om uw anonimiteit te garanderen. Vult u de vragenlijst in op een moment dat u de gehele vragenlijst in één keer af kan maken en op een moment dat u niet afgeleid wordt. Onder de deelnemers worden twee cadeaubonnen ter waarde van € 10,- verloot. Als u wilt meedingen naar de cadeaubon dient u aan het einde van de vragenlijst uw email adres achter te laten. Dit email adres wordt apart opgeslagen van de vragenlijst zodat uw ingevulde gegevens anoniem blijven. Er zijn geen risico's of voordelen verbonden aan het invullen van de vragenlijst. U kunt op ieder moment beslissen om te stoppen met invullen. Voor eventuele vragen kunt u contact opnemen met Celine Simons (celine.simons@wur.nl) Door op 'ja' te klikken geeft u aan dat u bovenstaande hebt gelezen en ermee instemt:

Ja, ik doe mee aan dit onderzoek

(Light claim & other perspective)

2. In dit onderzoek zijn we geïnteresseerd in hoe consumenten verschillende aspecten van het eten van chips evalueren. In dit film fragment ziet u een vrouw die thuis komt na een lange en vermoeiende dag op het werk. Bekijk eerst onderstaand filmpje. U kunt het filmpje starten door op het pijltje in het midden of linksonder in het beeld te klikken. Daarna volgen op de volgende pagina enkele vragen over het filmpje.

3. Beschrijf hoe de schaal eruit zag waar de chips in zat:

4. Terugdenkend aan het filmpje, in hoeverre bent u het eens met de volgende stellingen? Ter herinnering; de vrouw heeft de gehele portie van het glazen schaaltje gegeten. *

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De chips ziet er lekker uit | <input type="radio"/> |
| De chips ziet er uit alsof je er lang van kunt genieten | <input type="radio"/> |
| De kwaliteit van de chips lijkt goed | <input type="radio"/> |

5. Kijkend naar de foto van de portie chips, in hoeverre bent u het eens met de volgende stellingen?

*

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De portie ziet er groot uit | <input type="radio"/> |
| Dit is een normale eenpersoons portie | <input type="radio"/> |
| De chips lijkt me calorierijk | <input type="radio"/> |
| De chips lijkt me vet | <input type="radio"/> |
| De chips lijkt me gezond | <input type="radio"/> |

6. Denk terug aan de vrouw uit het filmpje. Geef aan in hoeverre u het eens bent met de volgende stellingen:

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De vrouw is goed in het weerstaan van verleidingen | <input type="radio"/> |
| De vrouw doet dingen die slecht voor haar zijn, als ze leuk zijn | <input type="radio"/> |
| De vrouw vindt het lastig om nee te zeggen | <input type="radio"/> |
| De vrouw eet over het algemeen gezonde voedingsproducten | <input type="radio"/> |
| De vrouw kan de chips niet weerstaan | <input type="radio"/> |
| De vrouw vindt het lastig om te stoppen met het eten van chips | <input type="radio"/> |
| De vrouw heeft een goede zelfbeheersing | <input type="radio"/> |
| De vrouw is impulsief | <input type="radio"/> |
| De vrouw eet een geschikte portiegrootte | <input type="radio"/> |
| De vrouw eet een typische eenpersoons portie | <input type="radio"/> |
| De vrouw eet veel chips | <input type="radio"/> |
| Het eten van een dergelijke hoeveelheid chips is een uitzondering voor deze vrouw | <input type="radio"/> |
| Het eten van deze hoeveelheid chips is een gewoonte voor deze vrouw | <input type="radio"/> |

7. Wat vindt u van de hoeveelheid chips die de vrouw gegeten heeft? Ter herinnering; de vrouw heeft de gehele portie van het glazen schaaltje gegeten. (slider)

8. Hoeveel calorieën denkt u dat ze gegeten heeft? Maak een inschatting. (slider) Aantal calorieën:

9. Hoeveel grammen chips denkt u dat ze gegeten heeft? Maak een inschatting. (slider) Aantal grammen:

10. Hoe denkt u dat de vrouw in het filmpje zich voelde tijdens het eten van de chips?

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| plezierig | <input type="radio"/> |
| teneergeslagen | <input type="radio"/> |
| gestrest | <input type="radio"/> |
| ontspannen | <input type="radio"/> |
| tevreden | <input type="radio"/> |
| boos | <input type="radio"/> |
| voldaan | <input type="radio"/> |
| gefrustreerd | <input type="radio"/> |
| blij | <input type="radio"/> |
| schuldig | <input type="radio"/> |
| schaamte | <input type="radio"/> |
| spijt | <input type="radio"/> |
| genietend | <input type="radio"/> |

(No claim & other perspective)

11. In dit onderzoek zijn we geïnteresseerd in hoe consumenten verschillende aspecten van het eten van chips evalueren. In dit film fragment ziet u een vrouw die thuis komt na een lange en vermoeiende dag op het werk. Bekijk eerst onderstaand filmpje. U kunt het filmpje starten door op het pijltje in het midden of linksonder in het beeld te klikken. Daarna volgen op de volgende pagina enkele vragen over het filmpje.

12. Beschrijf hoe de schaal eruit zag waar de chips in zat:

13. Terugdenkend aan het filmpje, in hoeverre bent u het eens met de volgende stellingen? Ter herinnering; de vrouw heeft de gehele portie van het glazen schaalpje gegeten. **

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De chips ziet er lekker uit | <input type="radio"/> |
| De chips ziet er uit alsof je er lang van kunt genieten | <input type="radio"/> |
| De kwaliteit van de chips lijkt goed | <input type="radio"/> |

14. Kijkend naar de foto van de portie chips, in hoeverre bent u het eens met de volgende stellingen? **

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De portie ziet er groot uit | <input type="radio"/> |
| Dit is een normale eenpersoons portie | <input type="radio"/> |
| De chips lijkt me calorierijk | <input type="radio"/> |
| De chips lijkt me vet | <input type="radio"/> |
| De chips lijkt me gezond | <input type="radio"/> |

15. Denk terug aan de vrouw uit het filmpje. Geef aan in hoeverre u het eens bent met de volgende stellingen:

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De vrouw is goed in het weerstaan van verleidingen | <input type="radio"/> |
| De vrouw doet dingen die slecht voor haar zijn, als ze leuk zijn | <input type="radio"/> |
| De vrouw vindt het lastig om nee te zeggen | <input type="radio"/> |
| De vrouw eet over het algemeen gezonde voedingsproducten | <input type="radio"/> |
| De vrouw kan de chips niet weerstaan | <input type="radio"/> |
| De vrouw vindt het lastig om te stoppen met het eten van chips | <input type="radio"/> |
| De vrouw heeft een goede zelfbeheersing | <input type="radio"/> |
| De vrouw is impulsief | <input type="radio"/> |
| De vrouw eet een geschikte portiegrootte | <input type="radio"/> |
| De vrouw eet een typische eenpersoons portie | <input type="radio"/> |
| De vrouw eet veel chips | <input type="radio"/> |
| Het eten van een dergelijke hoeveelheid chips is een uitzondering voor deze vrouw | <input type="radio"/> |
| Het eten van deze hoeveelheid chips is een gewoonte voor deze vrouw | <input type="radio"/> |

16. Wat vindt u van de hoeveelheid chips die de vrouw gegeten heeft? Ter herinnering; de vrouw heeft de gehele portie van het glazen schaalpje gegeten. (slider)

17. Hoeveel calorieën denkt u dat ze gegeten heeft? Maak een inschatting. (slider) Aantal calorieën:

18. Hoeveel grammen chips denkt u dat ze gegeten heeft? Maak een inschatting. (slider) Aantal grammen:

19. Hoe denkt u dat de vrouw in het filmpje zich voelde tijdens het eten van de chips?

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| plezierig | <input type="radio"/> |
| teneergeslagen | <input type="radio"/> |
| gestrest | <input type="radio"/> |
| ontspannen | <input type="radio"/> |
| tevreden | <input type="radio"/> |
| boos | <input type="radio"/> |
| voldaan | <input type="radio"/> |
| gefrustreerd | <input type="radio"/> |
| blij | <input type="radio"/> |
| schuldig | <input type="radio"/> |
| schaamte | <input type="radio"/> |
| spijt | <input type="radio"/> |
| genietend | <input type="radio"/> |

(Light claim & self perspective)

20. In dit onderzoek zijn we geïnteresseerd in hoe consumenten verschillende aspecten van het eten van chips evalueren. In dit film fragment wordt u gevraagd zich voor te stellen in een bepaalde situatie. Bekijk eerst onderstaand filmpje. U kunt het filmpje starten door op het pijltje in het midden of links onder in het beeld te klikken. Daarna volgen op de volgende pagina enkele vragen over het filmpje

21. Beschrijf hoe de schaal eruit zag waar de chips in zat:

22. Terugdenkend aan het filmpje, in hoeverre bent u het eens met de volgende stellingen? Ter herinnering; u heeft de gehele portie van het glazen schaalpje gegeten. *

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De chips ziet er lekker uit | <input type="radio"/> |
| De chips ziet er uit alsof je er lang van kunt genieten | <input type="radio"/> |
| De kwaliteit van de chips lijkt goed | <input type="radio"/> |

23. Kijkend naar de foto van de portie chips, in hoeverre bent u het eens met de volgende stellingen?

*

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---------------------------------------|---------------------------|-----------------------|--------------------------------|-----------------------|------------------------------|-----------------------|-----------------------|
| De portie ziet er groot uit | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dit is een normale eenpersoons portie | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| De chips lijkt me calorierijk | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| De chips lijkt me vet | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| De chips lijkt me gezond | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

24. Denk terug aan u zelf in de geschetste situatie, geef aan in hoeverre u het eens bent met de volgende stellingen:

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|--|---------------------------|-----------------------|--------------------------------|-----------------------|------------------------------|-----------------------|-------------------------|
| Ik ben goed in het weerstaan van verleidingen | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik doe dingen die slecht voor me zijn, als ze leuk zijn | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het lastig om nee te zeggen | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik eet over het algemeen gezonde voedingsproducten | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik kan de chips niet weerstaan | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het lastig om te stoppen met het eten van chips | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik heb een goede zelfbeheersing | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik ben impulsief | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik eet een geschikte portiegrootte | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik eet een typische eenpersoons portie | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik eet veel chips | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Het eten van een dergelijke hoeveelheid chips is een uitzondering voor mij | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Het eten van deze hoeveelheid chips is een gewoonte voor mij | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

25. Wat vindt u van de hoeveelheid chips die u gegeten zou hebben in de geschetste situatie? Ter herinnering; u heeft de gehele portie van het glazen schaalpje gegeten. (slider)

26. Hoeveel calorieën denkt u dat u gegeten zou hebben in de geschetste situatie? Maak een inschatting. (slider) Aantal calorieën:

27. Hoeveel grammen chips denkt u dat u gegeten zou hebben in de geschetste situatie? Maak een inschatting. (slider) Aantal grammen:

28. Hoe denkt u dat u zich zou gevoeld zou hebben tijdens het eten van de chips in de geschetste situatie?

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| plezierig | <input type="radio"/> |
| teneergeslagen | <input type="radio"/> |
| gestrest | <input type="radio"/> |
| ontspannen | <input type="radio"/> |
| tevreden | <input type="radio"/> |
| boos | <input type="radio"/> |
| voldaan | <input type="radio"/> |
| gefrustreerd | <input type="radio"/> |
| blij | <input type="radio"/> |
| schuldig | <input type="radio"/> |
| schaamte | <input type="radio"/> |
| spijt | <input type="radio"/> |
| genietend | <input type="radio"/> |

(No claim & self perspective)

29. In dit onderzoek zijn we geïnteresseerd in hoe consumenten verschillende aspecten van het eten van chips evalueren. In dit film fragment wordt u gevraagd zich voor te stellen in een bepaalde situatie. Bekijk eerst onderstaand filmpje. U kunt het filmpje starten door op het pijltje in het midden of linksonder in het beeld te klikken. Daarna volgen op de volgende pagina enkele vragen over het filmpje

30. Beschrijf hoe de schaal eruit zag waar de chips in zat:

31. Terugdenkend aan het filmpje, in hoeverre bent u het eens met de volgende stellingen? Ter herinnering; u heeft de gehele portie van het glazen schaaltje gegeten. **

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De chips ziet er lekker uit | <input type="radio"/> |
| De chips ziet er uit alsof je er lang van kunt genieten | <input type="radio"/> |
| De kwaliteit van de chips lijkt goed | <input type="radio"/> |

32. Kijkend naar de foto van de portie chips, in hoeverre bent u het eens met de volgende stellingen? **

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|---------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| De portie ziet er groot uit | <input type="radio"/> |
| Dit is een normale eenpersoons portie | <input type="radio"/> |
| De chips lijkt me calorierijk | <input type="radio"/> |
| De chips lijkt me vet | <input type="radio"/> |
| De chips lijkt me gezond | <input type="radio"/> |

33. Denk terug aan u zelf in de geschetste situatie, geef aan in hoeverre u het eens bent met de volgende stellingen:

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|--|---------------------------|-----------------------|--------------------------------|-----------------------|------------------------------|-----------------------|-------------------------|
| Ik ben goed in het weerstaan van verleidingen | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik doe dingen die slecht voor me zijn, als ze leuk zijn | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het lastig om nee te zeggen | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik eet over het algemeen gezonde voedingsproducten | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik kan de chips niet weerstaan | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik vind het lastig om te stoppen met het eten van chips | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik heb een goede zelfbeheersing | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik ben impulsief | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik eet een geschikte portiegrootte | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik eet een typische eenpersoons portie | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ik eet veel chips | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Het eten van een dergelijke hoeveelheid chips is een uitzondering voor mij | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Het eten van deze hoeveelheid chips is een gewoonte voor mij | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

34. Wat vindt u van de hoeveelheid chips die u gegeten zou hebben in de geschetste situatie? Ter herinnering; u heeft de gehele portie van het glazen schaalpje gegeten. (slider)

35. Hoeveel calorieën denkt u dat u gegeten zou hebben in de geschetste situatie? Maak een inschatting. (slider) Aantal calorieën:

36. Hoeveel grammen chips denkt u dat u gegeten zou hebben in de geschetste situatie? Maak een inschatting. (slider) Aantal grammen:

37. Hoe denkt u dat u zich zou gevoeld zou hebben tijdens het eten van de chips in de geschetste situatie?

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|----------------|---------------------------|-----------------------|--------------------------------|-----------------------|------------------------------|-----------------------|-------------------------|
| plezierig | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| teneergeslagen | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| gestrest | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ontspannen | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| tevreden | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| boos | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| voldaan | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| gefrustreerd | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| blij | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| schuldig | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| schaamte | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| spijt | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| genietend | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

(Questions for everyone)

38. In hoeverre bent u het eens met de volgende stellingen?

| | Helemaal mee oneens | Mee oneens | Een beetje mee oneens | Neutraal | Een beetje mee eens | Mee eens | Helemaal mee eens |
|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Ik vind chips lekker | <input type="radio"/> |
| Ik eet vaak chips | <input type="radio"/> |
| Ik koop vaak chips | <input type="radio"/> |

39. Hoe hongerig voelt u zich op dit moment? (slider)

40. Wat denkt u dat het doel van deze studie is?

41. Wat is uw leeftijd? Leeftijd in jaren

42. Wat is uw geslacht? Man/vrouw

43. Wat is uw lengte? Lengte in centimeters

44. Hoeveel weegt u? Gewicht in kilogrammen

45. Wat is uw hoogst behaalde opleiding? Of indien u nog studeert, welke opleiding volgt u op dit moment?

- basisonderwijs
- lager / voorbereidend beroepsonderwijs (vmbo beroeps, lbo, lts, ito, leao, lhno, lave, huishoudschool, etc.)
- middelbaar algemeen voortgezet onderwijs (vmbo theoretisch, mavo, ulo, mulo, ivo, vglo, etc.)
- middelbaar beroepsonderwijs (mbo, mts, meao, mhno, inas, mis, etc.)
- hoger algemeen voortgezet onderwijs (havo)
- voorbereidend wetenschappelijk onderwijs (vwo, gymnasium, atheneum)
- hoger beroepsonderwijs (hbo, hts, heao, kandidaatsopleiding, bachelor)
- wetenschappelijk onderwijs (wo, doctoraal, master)

46. De volgende vragen gaan over voedingsgedrag. In hoeverre bent u het met de volgende stellingen eens?

| | nooit | zelden | soms | vaak | heel vaak |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Wanneer u iets zwaarder bent geworden, eet u dan minder dan gewoonlijk? | <input type="radio"/> |
| Probeert u minder te eten tijdens maaltijden dan dat u eigenlijk zou willen? | <input type="radio"/> |
| Hoe vaak weigert u eten of drinken omdat u bang bent dat u zwaarder wordt? | <input type="radio"/> |
| Houdt u exact bij wat u eet? | <input type="radio"/> |
| Eet u opzettelijk producten waarvan u afvalt? | <input type="radio"/> |
| Wanneer u teveel hebt gegeten, eet u dan de daarop volgende dagen minder? | <input type="radio"/> |
| Eet u opzettelijk minder om te voorkomen dat u zwaarder wordt? | <input type="radio"/> |
| Hoe vaak probeert u geen tussendoortjes te nemen omdat u op uw gewicht let? | <input type="radio"/> |
| Hoe vaak probeert u 's avonds niet te eten omdat u op uw gewicht let? | <input type="radio"/> |
| Houdt u rekening met uw gewicht wanneer u eet? | <input type="radio"/> |

47. Als u nog opmerkingen heeft na het invullen van deze enquête kunt u die hier invullen:

48. Heel erg bedankt voor het invullen van de enquête! Wanneer u op de ">>" knop klikt, wordt u verbonden met een apart bestand waar u uw email adres in kan vullen. Deze wordt apart opgeslagen van de gegevens in dit onderzoek om uw anonimiteit te garanderen. Als u wilt meedingen naar de cadeaubon van 10 Euro, vul dan op de volgende pagina uw emailadres in. Wanneer u gewonnen heeft, krijgt u bericht per mail. Wanneer u uw emailadres niet in wilt vullen, druk dan aub ook op de ">>" knop om het onderzoek af te ronden en uw gegevens op te slaan.

(Questionnaire for e-mail for gift-cards)

1. Als u kans wilt maken op één van de cadeaubonnen, kunt u hieronder uw e-mail adres achterlaten

2. Bent u geïnteresseerd naar de resultaten van het onderzoek?

- Ja (u zult een e-mail ontvangen indien u hierboven uw e-mail adres heeft ingevuld)
- Nee

3. Aan Wageningen Universiteit worden vaker studies verricht waarvoor wij op zoek zijn naar deelnemers. Mogen wij u hiervoor af en toe (maximaal 1 keer per maand) benaderen per e-mail?

- ja
- nee

Pictures shown in Questionnaire:

*

**

* / **

