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Impact of Photo Angle on Food Perceptions and Evaluation

A Thesis

Presented to

The Faculty and the Honors Program

Of the University of San Diego

By

Austin Bradley Jacobs

Marketing

2017

Abstract

Food photography is an increasingly popular phenomenon, especially on social media. There are over 215 million photos on Instagram with the hashtag “food.” There is a growing trend to showcase the food on social media, as both health and “food art” has become part of popular culture. The purpose of this project is to explore how the photo angle utilized in the image influences a number of consumer outcomes, including evaluations of the food itself, the company, and desire to interact with the image. Specifically, pictures of food commonly employ either a three-quarter downward looking angle (as if you were sitting at the table ready to take a bite of the food) or an overhead “bird’s eye view” angle (as if you were standing over and looking down at the food). Through a series of four experiments we show that photos of food taken from a three-quarter downward looking angle are evaluated more favorably in terms of perceived taste, attractiveness, and desire to eat the food, while photos of food taken from an overhead angle create brand perceptions associated with progressiveness and trendiness.

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Introduction

Food is becoming more and more prevalent in American culture. The “foodie” culture has started to rise, as food is now starting to replace art as high culture (New York Times, 2012). People want to be seen eating at the top restaurants, and discussions over recent food expeditions are more popular than ever. In the experiential driven society that we live in today, the average meal (that ten years ago was looked at as fuel) has become a make-my-day type of endeavor at every meal.

If you were to walk into a trendy restaurant today, you would be hard pressed to find someone who did not take a picture of their food, especially among the Millennial crowd. Now that almost everyone has a smart phone on them at all times, it is incredibly easy to take a picture of the food that you are about to eat, whether it is to remember and look back on that meal later, show friends or family, share it on social media, or any one of many other reasons. Most people will take a picture of their food from a three-quarter downward looking angle or overhead, and very few people consciously think through why they take the photo from a certain angle. This research is not to explore the reasons why people take photos from a specific angle, but rather how they evaluate and perceive photos of food taken at these different angles.

With the popularity of social media, many people are taking the photos they take of their food and posting them online. Restaurants, bakeries, and food trucks are also adding to the “food traffic” on social media by posting pictures of their decadent creations to try to obtain business. Americans spend about 75 minutes a day on social media, scrolling through all of the videos and photos that our friends (and other accounts that we follow) deem important to see (Social Media Today, 2017). On Instagram alone there 215.8 million posts with “#food” in April of 2017; this

is compared to 191.3 million in October of 2016 and only 800,000 in March of 2013 (Instagram, 2017).

Researchers are also paying more attention to the food photos and the influence that exposure to such images has on important consumer outcomes. For example, previous research in consumer behavior has examined the impact of brand value (Mitchell, 1986), number of food items on packaging (Madzharov and Block, 2010) and consumer generated images (Coary and Poor, 2016). Despite this growing interest, no one to our knowledge has investigated the influence that the photo angle has in the domain of food photography. The purpose of this study is to explore the relationship between the angle used in a photo of food and the perceptions and evaluation of the food photographed.

Theoretical Framework

Previously, there has been research looking at photography angle of products, but not necessarily in regards to food. This study will be focusing on two different types of photographic angles in relation to the food in the photo: an overhead angle and a three-quarter downward looking angle (referred to as Overhead and Side Angle from here on out).

In the first landmark study looking at photographic angle of products, Meyers-Levy and Peracchio (1992) found that when motivation to process an ad is low to moderate, viewers' evaluations were most favorable when the photographic angle was looking up at the product, and least favorable when looking down on the object. This could be explained by the fact that when we look up at something we view it favorably (such as our parents), and when we look down on something we view it negatively (such as younger siblings) (Meyers-Levy and Peracchio, 1992). In a second study by Peracchio and Meyers-Levy, they showed that participants remembered the

brand name of products that were depicted from an upward angle more than from a downward angle. The same study showed that a downward camera angle can highlight negative aspects of a product (weakness), but it can also highlight select positive attributes (such as naturalness of a product) (Peracchio and Meyers-Levy, 2005). For the purpose of this study, we can take away that looking down on a product is negative for the product's evaluation unless there is an aspect of naturalness for the product (such as healthy food).

There have also been studies conducted looking at the intensities of emotion that are generated in participants when they view situations from an actor's point of view. When viewing situations from an actor's point of view (first person), Hung and Mukhopadhyay found that participants were more likely to have hedonic emotions (excitement, frustration, joy) (Hung and Mukhopadhyay, 2012). Another study found that when participants imagined themselves as part of the ad (similar to an actor's perspective), they had higher evaluations of the advertisements than when they did not place themselves in the situation depicted by the ad (Jiang et al., 2014). Libby and Eibach show that viewing an image from a first person point of view generates more current emotions and emotions focusing on themselves (Libby and Eibach, 2011). Building upon the actor's perspective, an ad that is more promotionally focused will be evaluated more favorably when it is from an actor's perspective (first person) than from an observer's perspective (third person). The promotional aspect of the advertisement creates a desire for immediate satisfaction and to act on the internal desires (Zhang and Yang, 2015). We want to further explore this in our studies with immediate purchase intention after seeing a food photo.

While there has been other research conducted exploring the emotions experienced when they view situations from a third person or observer's point of view, our study will not be looking at the third person point of view (I.E. if the participant/viewer is sitting across the table

looking at food). Rather, this study looks to investigate a bird's eye view perspective, as if the observer was standing above the food looking directly down on it. There is currently no research to our knowledge of viewing products (especially food) from this bird's eye view perspective. The bird's eye view/Overhead perspective can create a comprehensive perspective of a situation or problem at hand instead of only looking at the situation through one perspective. The Overhead photo is one of the current trends in food photography, and we look to find out how this angle is impacting perceptions and evaluation. Many of these photos have an artistic flair to the photos, and the viewer of the photo can easily see how much work went into making the picture just right. By creating a comprehensive perspective of the photo, we think that viewers of the photo will have an opportunity to appreciate the beauty and creativity that went into designing that photo. We believe that Overhead photos have developed a reputation as artistic, trendy, and cool from this food photography trend.

For the purpose of this study, an actor's point of view is considered a Side Angle photograph while a bird's eye point of view is considered an Overhead photograph.

Based on previous studies, we think that hedonic emotions that can be generated from an actor's perspective will translate to Side Angle photos being evaluated more favorably amongst variables that correspond to immediate satisfaction. As there is little current research with Overhead photos, we look to expand upon the notion that a bird's eye view makes people feel removed from the situation and can look at the situation more holistically to appreciate the beauty and creativity of the photo. Other potential factors that could interact with the photo angle to influence perceptions and evaluation of the images are the type of food shown, the brand of restaurant promoting the image, and type of media used to promote the image.

We believe that there is a gap in the research of food photography. We look to fill this gap by looking at the difference in perceptions and evaluation between Overhead and Side Angle photos. Based on previous studies, we can expect food photos that would provide more immediate satisfaction to be evaluated more favorably if the photo is taken from a Side Angle (actor's point of view/first person), and food photos that exhibit more of an artistic flair, or would be thought of as trendy/cool, will be evaluated more favorably if the photo is taken from Overhead. We look to explain our anticipated results through the moderators of food type, brand type, and media type.

Methodology Overview

This study is a collection of four experiments that examine the influence of photo angle on perceptions and evaluation, as well as several potential moderators. In Study 1, we explore whether the effects of photo angle on perceptions and evaluations are different for Healthy versus Indulgent foods. In Study 2, we explore whether the effects of photo angle on perceptions and evaluations are different for Traditional versus New Age bakeries. In Study 3, we explore the effect of photo angle for brand perceptions. In Study 4, we explore whether the effects of photo angle on perceptions and evaluations are different for Instagram versus Print media.

The data was collected through online surveys. The surveys themselves were hosted on Qualtrics (a survey hosting service), and the surveys were deployed on MTURK (Amazon Mechanical Turk). MTURK is a scalable way for researchers to collect data by offering workers a certain amount of money for each survey they take. We offered workers \$0.30 to take each of our surveys. A detailed description of the methodology of each study will be discussed later in the paper.

Study 1: The Moderating Role of Food Type

Methodology

The purpose of Study 1 is to provide initial evidence that the photo angle has an influence on perceptions and evaluation, and can be moderated by the food type (Healthy and Indulgent). We had 399 participants take our survey. The study employed a 2 (photo angle: Side Angle, Overhead) X 2 (food type: Healthy, Indulgent) between-subjects design. Each participant was randomly assigned to one of four conditions to evaluate a specific photo. The four conditions were: Healthy Side Angle, Healthy Overhead, Indulgent Side Angle, and Indulgent Overhead. The Healthy photos are of a plate of cut up strawberries, blueberries, and kiwis. The Indulgent photos are of a piece of chocolate cake with chocolate frosting. The below image shows a visual depiction of the conditions that each participant could be placed in, and the photo that they evaluated:

Participants were asked to evaluate the photo they were shown along a series of dimensions, all on a scale from 1-9 (1 being “Not at all” or “Not likely at all” and 9 being “Very Much” or “Very Likely”). They were asked:

- Evaluate the picture as being Appetizing (from 1-9), Attractive (from 1-9), and Visually Appealing (from 1-9). These scores were then aggregated to form a composite labeled as ImageEval in Appendix A.
- To what extent do you think the food shown in the picture would be Tasty (1-9), Delicious (1-9), and Flavorful (1-9)? These scores were then aggregated to form a composite labeled as OverallTaste in Appendix A.
- To what extent do you think the food shown in the picture is Healthy (1-9) and Nutritious (1-9)? These scores were then aggregated to form a composite labeled as OverallHealth in Appendix A.
- How likely would you be order this food (1-9)? These scores are labeled Order in Appendix A.
- How likely would you be to interact with this picture if you saw it on social media (1-9)? These scores are labeled SocialMedia in Appendix A.

We expected to have interaction terms between the photo angle and food type. We expected that the Healthy Overhead photos would be evaluated more favorably in ImageEval, OverallHealth, and SocialMedia; while the Indulgent Side Angle photos would be evaluated more favorably in OverallTaste and Order.

Results

We analyzed the effect that photo angle and food type had on all five dependent variables (ImageEval, OverallTaste, OverallHealth, Order, and Social Media), and will discuss the results in what follows.

Image Evaluations. The three items used to measure evaluations of the image were averaged to form a single ImageEval index ($\alpha = .81$). Using the ImageEval index as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and food type (Healthy, Indulgent) as between-subjects factors. The results revealed a marginally significant main effect for photo angle ($F(1,395) = 3.69, p < .10$) ($p = .055$), such that participants evaluated the Side Angle photo ($M = 7.51$) more favorably than the Overhead photo ($M = 7.17$). There was neither a main effect for food type ($F(1,395) = 2.628, p > .10$), nor an interaction between photo angle and food type ($F(1,395) = .274, p > .10$).

Overall Taste. The three items used to measure evaluations of the image were averaged to form a single OverallTaste index ($\alpha = .77$). Using the OverallTaste index as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and food type (Healthy, Indulgent) as between-subjects factors. The results revealed a significant main effect for photo angle ($F(1,395) = 4.668, p < .05$), such that participants evaluated the Side Angle photo ($M = 7.79$) more favorably than the Overhead photo ($M = 7.44$). There was neither a main effect for food type ($F(1,395) = .005, p > .05$), nor an interaction between photo angle and food type ($F(1,395) = .003, p > .05$).

The other three variables (OverallHealth, Order, and SocialMedia) were all non-significant for main effects and interactions. Please see Appendix A for full results.

Discussion

Study 1 did not fully achieve its fully desired results, but we still conquered our baseline goal of showing that photo angle does impact a consumer's evaluation of a food photo. Ideally, we wanted to have an interaction between the photo angle and food type so we could make

recommendations for which angle to take pictures for either healthy food (such as fruit) or indulgent food (such as chocolate cake). While we did not find a significant interaction in our data, we can say that participants thought that Side Angle photos were more aesthetically pleasing (Appetizing, Attractive, and Visually Appealing) than Overhead photos (7.51 v 7.17) and that Side Angle photos were perceived as tastier (Tasty, Delicious, Flavorful) than Overhead photos (7.79 v 7.44).

In our original hypothesis for Study 1 we believed that we would find an interaction (which we didn't). That is, we thought Overhead photos would be evaluated more favorably for ImageEval (aesthetically pleasing) and Side Angle photos would be evaluated more favorably for OverallTaste (perceived taste). We thought Overhead photos would be considered more aesthetically pleasing as more “artsy” food photos are taken from Overhead, and many social media influencers use Overhead photos consistently. Our hypothesis was not supported. We do not know the exact reasons why, as we did not ask participants to explain their evaluations of the photo. We consider the Side Angle photos to be from the first person point of view, and we believe that the positive current emotions generated from envisioning themselves eating the food could be transferred into seeing the photos as more visually appealing and tastier than if they were viewing the food from Overhead. In our theoretical framework we bring up the idea that Overhead photos tend to be considered more artistic (and therefore more visually appealing), but this was not supported by our data.

As far as implications go, this study shows that a photo should be taken from a Side Angle to convince the consumer that the food is aesthetically pleasing and would be tasty, regardless of the type of food being photographed. While we did not find a significant effect of photo angle on intent to order the food, it at least reasons that if someone believes the food is

aesthetically pleasing and tasty they should be more likely to purchase the food than if they did not believe the food was aesthetically pleasing and tasty.

This study is not as robust as later studies in terms of questions asked and directionality of the data, as this was our first attempt at capturing the difference in evaluation of photos taken from a Side Angle versus Overhead. From this first study we learned that there is a tangible difference in how consumers evaluate food photos depending on the angle the photo is taken, and in the next studies we take different approaches to reach more solid conclusions and recommendations.

Study 2: The Moderating Role of Brand Image

Methodology

The purpose of Study 2 is to take our findings from Study 1 (that photo angle does have an impact on perceptions and evaluation) and moderate the influence of photo angle through different brands of bakeries. We had 199 participants take our survey. Each participant was randomly placed in one of four conditions to evaluate a specific photo. The study employed a 2 (photo angle: Side Angle, Overhead) X 2 (brand type: Traditional, New Age) between-subjects design. The four conditions were: Traditional Side Angle, Traditional Overhead, New Age Side Angle, and New Age Overhead. All of the photos are of chocolate chip muffins. The moderator for this study was a written description of a bakery. We had Mary's Bakery as our traditional bakery, and Extraordinary Mary's as our new age bakery. We differentiated these through a written description of the bakery that participants read before they saw either a Side Angle or Overhead photo of chocolate chip muffins. For those participants that were evaluating either a Side Angle or Overhead photo for Mary's Bakery (the Traditional bakery), they read this description before evaluating the photo:

Mary's Bakery is a made-from scratch specialty bakery on a mission to make flavorful and delicious muffins, cakes, and pastries using century-old family recipes that have been passed down from generation to generation. Since opening in 1922, Mary's has been steeped in the tradition of doing things the old-fashioned way - from getting up at 3 am to start making dough for the day to using a 135-year-old coal-burning oven. When taking a bite into one of Mary's masterpieces you will truly taste the treasured flavors of the past.

For those participants that were evaluating either a Side Angle or Overhead photo for Extraordinary Mary's (the New Age bakery), they read this description before evaluating the photo:

Extraordinary Mary's is a creative concept bakery on a quest to make the flavor of ordinary muffins, cakes, and pastries extraordinary using inventive recipes that are refreshed daily based on the whims of Mary's inspired bakers. Since opening in 2012, Mary's has been committed to innovation, using cutting-edge baking techniques and equipment to transform the ordinary into the extraordinary. When taking a bite into one of Mary's creations you will truly taste the unexpected flavors of the future.

The below image shows a visual depiction of the conditions that each participant could be placed in, and the photo that they evaluated:

Participants were asked to evaluate the photo they were shown along a series of dimensions, all on a scale from 1-7. They were asked:

- Please rate to the extent to which you believe the food shown in this picture would be Tasty (1 = Not Tasty to 7 = Tasty), Healthy (1 = Unhealthy to 7 = Healthy), Enjoyable (1

= Not Enjoyable to 7 = Enjoyable), Beneficial (1 = Not Beneficial to 7 = Beneficial), Pleasurable (1 = Not Pleasurable to 7 = Pleasurable), and Nutritious (1 = Not Nutritious to 7 = Nutritious). All of these scores are labeled as the 7-value in Appendix B.

- How likely would you be to visit the bakery (1 = Not at all likely to 7 = Very likely)? These scores are labeled Visit in Appendix B.
- How likely would you be to order the food shown in this image (1 = Not at all likely to 7 = Very likely)? These scores are labeled Order in Appendix B.
- To what extent do you want to eat this food right now (1 = Not at all to 7 = Very much)? These scores are labeled Desire in Appendix B.
- How likely would you be to interact with this picture if you saw it on social media (1 = Not at all likely to 7 = Very likely)? These scores are labeled SocialMedia in Appendix B.

We expected to have interaction terms between the photo angle and brand type. We expected that the New Age Overhead photos would be evaluated more favorably in Healthy, Enjoyable, Beneficial, Pleasurable, Nutritious, and Social Media; while the Traditional Side Angle photos would be evaluated more favorably in Tasty, Visiting, Ordering, and Eating.

Results

We analyzed the effect that photo angle and brand type had on all ten dependent variables (Tasty, Healthy, Enjoyable, Beneficial, Pleasurable, Nutritious, Visit, Order, Desire, and SocialMedia), and will discuss the variables that had significant results in what follows. Tasty. Using Tasty as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and brand type (Traditional, New Age) as between-subjects factors. The

results revealed a marginally significant main effect for brand type ($F(1,195) = 2.914, p < .10$), such that participants evaluated the Traditional photo ($M = 6.31$) more favorably than the New Age photo ($M = 6.06$). There was neither a main effect for photo angle ($F(1,195) = 1.264, p > .10$), nor an interaction between photo angle and food type ($F(1,195) = .110, p > .10$).

Enjoyable. Using Enjoyable as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and brand type (Traditional, New Age) as between-subjects factors. The results revealed a marginally significant main effect for brand type ($F(1,195) = 3.260, p < .10$), such that participants evaluated the Traditional photo ($M = 6.32$) more favorably than the New Age photo ($M = 6.04$). There was neither a main effect for photo angle ($F(1,195) = 1.264, p > .10$), nor an interaction between photo angle and food type ($F(1,195) = .110, p > .10$).

Social Media. Using Social Media as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and brand type (Traditional, New Age) as between-subjects factors. The results revealed a marginally significant main effect for interaction between photo angle and brand type ($F(1,195) = 2.740, p < .10$), such that participants evaluated the Traditional photo from Overhead ($M = 4.24$) more favorably than the Traditional photo from a Side Angle ($M = 4.04$); and that participants evaluated the New Age photo from a Side Angle ($M = 4.43$) more favorably than the New Age photo from Overhead ($M = 3.69$). There was neither a main effect for photo angle ($F(1,195) = .875, p > .10$), nor a main effect for brand type ($F(1,195) = .079, p > .10$).

The rest of the variables (Healthy, Beneficial, Pleasurable, Nutritious, Visit, Order, and Desire) were all non-significant for main effects and interactions. Please see Appendix B for full results.

Discussion

After analyzing our results from Study 1, we wanted to see if we could moderate the effects of photo angle by different brand types. We used bakeries as our food establishment to differentiate by brand as there is a clear positioning difference between Traditional bakeries (Grandma's cookies or recipes that have been passed down for generations) and New Age bakeries (vegan, organic, interesting combinations of flavors).

Study 2 achieved its desired result in generating a marginally significant interaction term between photo angle and brand type for potential social media interaction, however that was the only variable that showed an interaction term (and it was only significant at a 90% confidence interval, not at 95%). We did not find a significant main effect for photo angle for any variable, which is disappointing as that is the main driving factor for our overarching research question. We did find a marginally significant main effect for brand type for Tasty and Enjoyable, which generates useful implications for bakeries.

As social media marketing is starting to drive more and more purchase behavior, companies are paying much closer attention to how they market their products (and food) on social media. In Study 2, we are able to show which angle food should be photographed (based on the type of bakery) to generate the most interaction on social media. This is important for bakeries as some consumers base what bakery they go to off of how popular that bakery is on social media. The more likes, comments, and shares that a post/company has, the more popular it is considered. This, in turn, drives traffic to the bakery. In our study we show that Traditional bakeries should be taking food photos from Overhead, as participants are more likely to interact with that photo than Side Angle photos (4.24 v 4.04), and New Age bakeries should be taking food photos from Side Angles, as participants are more likely to interact with that photo than

Overhead photos (4.43 v 3.69). These results are the opposite of what we hypothesized: we thought that consumers would be more likely to interact with photos on social media from a New Age bakery if they were taken from Overhead and from a Traditional bakery if the photo was taken from a Side Angle. This goes back to the theoretical framework that photos from first person point of view (Side Angle) generates more current, hedonic emotions that push a consumer towards immediate satisfaction, and photos from a bird's eye view (Overhead) appeal more to consumers with more of an artistic flair/attentiveness to social trends. We thought that Traditional bakeries would have higher scores for Side Angle photos as many people find Traditional recipes are delicious and satisfy immediate craving, and first person photos generate the same desire to satisfy an immediate craving. We thought that New Age bakeries would have higher scores for Overhead photos as many people find New Age bakeries to be more trendy, hip, artsy, and cool, and bird's eye view photos generate the same perceptions. This is not the case. Studies later in our research explore this idea more.

We found marginal main effects for brand type for the variables of Tasty and Enjoyable. In both cases, photos from a Traditional bakery were perceived as more Tasty (6.31 v 6.06) and more Enjoyable (6.32 v 6.04). We believe this is because Side Angle photos generates more current, hedonic emotions, and this is coupled with the emotions and anticipated satisfaction that baked goods from a Traditional bakery evoke. For implications, if Traditional bakeries want to have their food perceived as Tasty or Enjoyable (or both), they should be taking photos of their food from a Side Angle.

In our next study, Study 3, we take a deeper look into the questions Study 2 sparked surrounding the effect of photo angle on brand perceptions.

Study 3: Influence of Photo Angle on Brand Perceptions

Methodology

The purpose of Study 3 is to provide more evidence that photo angle influences perceptions and evaluation of food images, and to provide initial evidence that photo angle has an impact on brand perceptions. The study employed a two-condition study looking at the impact of the photo angle (Side Angle, Overhead). We had 99 participants take our survey. Each participant was randomly placed in one of two conditions to evaluate a specific photo. The two conditions were Side Angle and Overhead. All of the photos are of a piece of chocolate cake with chocolate frosting (the same picture as used in Study 1). The below image shows a visual depiction of the conditions that each participant could be placed in, and the photo that they evaluated:

Participants were asked to evaluate the photo they were shown along a series of dimensions. Participants were told that the picture they were seeing was potentially going to be used on social media accounts that belong to Taylor's Restaurant (a fictional restaurant). We chose the name Taylor's as it was generic enough to be either owned by a male or female, and nothing about the name of the restaurant created any preconceived notions of the restaurant (solely based off of the name). They were asked:

- Please rate to the extent to which you believe the food shown in this picture would be Tasty (1 = Not Tasty to 7 = Tasty), Healthy (1 = Unhealthy to 7 = Healthy), Enjoyable (1 = Not Enjoyable to 7 = Enjoyable), Beneficial (1 = Not Beneficial to 7 = Beneficial), Pleasurable (1 = Not Pleasurable to 7 = Pleasurable), and Nutritious (1 = Not Nutritious to 7 = Nutritious). All of these scores are labeled as the 7-value in Appendix C.
- How likely would you be to visit the bakery (1 = Not at all likely to 7 = Very likely)? These scores are labeled Visit in Appendix C.
- How likely would you be to order the food shown in this image (1 = Not at all likely to 7 = Very likely)? These scores are labeled Order in Appendix C.
- To what extent do you want to eat this food right now (1 = Not at all to 7 = Very much)? These scores are labeled Desire in Appendix C.
- How likely would you be to interact with this picture if you saw it on social media (1 = Not at all likely to 7 = Very likely)? These scores are labeled SocialMedia in Appendix C.

The above questions were the exact same as Study 2. Study 3 is different as we asked a series of brand perception questions. These were developed off of the framework of Siguaw et. al's Brand Personality Scale (Siguaw, Mattila, and Austin, 1999). Participants were asked to evaluate your perceptions of Taylor's Restaurant using the following scales (all of them are on a scale of 1 to 7): Unapproachable (1) to Approachable (7); Conservative (1) to Progressive (7); Disagreeable (1) to Personable (7); Traditional (1) to Trendy (7); Serious (1) to Humorous (7); Slow (1) to Fast (7); Local Restaurant (1) to National Chain (7); Inexpensive (1) to Expensive (7); Dishonest (1) to Honest (7); Unfriendly (1) to Friendly (7); Cookie-Cutter (1) to Unique (7); Dull (1) to

Exciting (7); and Feminine (1) to Masculine (7). All of these scores are labeled as the “7” value (Approachable, Progressive, etc.) in Appendix C.

We expected the Overhead photos would be evaluated more favorably for Healthy, Enjoyable, Beneficial, Pleasurable, Nutritious, and Social Media for the food-related dependent variables; and Approachable, Progressive, Personable, Trendy, Friendly, Unique, and Exciting for the brand perception-related variables. We expected the Side Angle photos would be evaluated more favorably for Tasty, Visiting, Ordering, and Eating for the food-related dependent variables; and Humorous, Fast, National Chain, Expensive, and Masculine in the brand perception-related variables.

Results

We analyzed the effect that photo angle had on ten food-related dependent variables (Tasty, Healthy, Enjoyable, Beneficial, Pleasurable, Nutritious, Visit, Order, Desire, and SocialMedia). There were no significant effects for photo angle for any of these variables.

We analyzed the effect that photo angle had on thirteen brand perception-related dependent variables (Approachable, Progressive, Personable, Trendy, Humorous, Fast, NationalChain, Expensive, Honest, Friendly, Unique, Exciting, and Masculine), and will discuss the variables that had significant results in what follows.

Approachable. Using Approachable as a dependent variable, we conducted a one-way ANOVA with photo angle (Side Angle, Overhead) as between-subjects factors. The results revealed a significant effect for photo angle ($F(1,96) = 5.755, p < .05$), such that participants evaluated the Overhead image ($M = 5.98$) more favorably than the Side Angle image ($M = 5.47$).

Personable. Using Personable as a dependent variable, we conducted a one-way ANOVA with photo angle (Side Angle, Overhead) as between-subjects factors. The results revealed a significant effect for photo angle ($F(1,96) = 5.184, p < .05$), such that participants evaluated the Overhead photo ($M = 5.76$) more favorably than the Side Angle photo ($M = 5.31$).

Trendy. Using Trendy as a dependent variable, we conducted a one-way ANOVA with photo angle (Side Angle, Overhead) as between-subjects factors. The results revealed a marginally significant effect for photo angle ($F(1,96) = 3.231, p < .10$), such that participants evaluated the Overhead photo ($M = 5.12$) more favorably than the Side Angle photo ($M = 4.55$).

Exciting. Using Exciting as a dependent variable, we conducted a one-way ANOVA with photo angle (Side Angle, Overhead) as between-subjects factors. The results revealed a marginally significant effect for photo angle ($F(1,96) = 2.656, p < .10$), such that participants evaluated the Overhead photo ($M = 5.14$) more favorably than the Side Angle photo ($M = 4.67$).

The other nine variables (Progressive, Humorous, Fast, NationalChain, Expensive, Honest, Friendly, Unique, and Masculine) were all non-significant. Please see Appendix C for full results.

Discussion

When we were first embarking on our quest to determine if photo angle impacted perceptions and evaluation of food photos, we decided to focus on moderating the effect of the photo angle by different food types or dichotomous food positioning (Healthy food v Indulgent food, Traditional bakeries v New Age bakeries). After analyzing our results from Study 2, we decided to take a slight pivot and explore how photo angle could impact brand perceptions in addition to dichotomous food positioning. In Study 3 we took a step back by using a two

condition study (instead of a 2 x 2 study) focusing solely on photo angle to see if we could gather more solid data for our baseline research question, and to see if the difference in evaluation of photo angle could impact brand perceptions. We also wanted to see if hunger played a contributing factor to the evaluation of the photos. Hunger was controlled for in our data analysis, and we found that hunger was not significant in any evaluation.

Study 3 achieved its desired results in terms of brand perceptions regarding a restaurant being considered Approachable, Personable, Trendy, and Exciting, but it did not provide more solid data for food perceptions or actionable intentions (visit the restaurant, order the food, desire to eat the food right now, or interact with the photo on social media). The brand perceptions are associated with the restaurant as a whole, not solely the food depicted. We also found that hunger slightly influenced the evaluation of the photos, but not significantly. This is an area for future research.

Overhead photos were evaluated more favorably than Side Angle photos for the four variables that showed a (marginally) statistically significant effect (Approachable, Personable, Trendy, and Exciting), (Approachable – 5.98 v 5.47, Personable – 5.76 v 5.31, Trendy – 5.12 v 4.55, and Exciting – 5.14 v 4.67). These results support our hypothesis that Overhead photos create brand perceptions (loosely) associated with being hip, artsy, cool, and general social trends. This ties back into our theoretical framework that bird's eye view (Overhead) photos appeal to consumers with more of an artistic flair/attentiveness to social trends because they are given the opportunity to view the photo from a more comprehensive vantage point and can appreciate everything about the photo.

The implications of this data are that if a restaurant is trying to position themselves as Approachable, Personable, Trendy, and/or Exciting, they should take photos of their food from

Overhead. The data from this study does not show that the Overhead angle will also create positive perceptions about the actual food at the restaurant, but the data does show that Overhead photos can be effectively utilized to position a restaurant as Approachable, Personable, Trendy and/or Exciting. This is not saying that these attributes are desirable for all restaurants or consumers. The data shows that if a restaurant wants to be thought of as Approachable, Personable, Trendy and/or Exciting in the minds of consumers, then restaurant should take photos of their food from Overhead.

Our fourth and final study looks to further explore the effect of photo angle on brand perceptions through the moderator of media type.

Study 4: The Moderating Role of Media Type

Methodology

The purpose of Study 4 is to find further evidence that photo angle impacts perceptions and evaluations of the food depicted and brand perceptions of the restaurant promoting the food. Study 4 also looks to explore the impact of photo angle as moderated by media type (Instagram and Print). We had 246 participants take our survey. The study employed a 2 (photo angle: Side Angle, Overhead) X 2 (media type: Instagram, Print) between-subjects design. Each participant was randomly placed in one of four conditions to evaluate a specific photo. The four conditions were: Instagram Side Angle, Instagram Overhead, Print Side Angle, and Print Overhead. All of the photos are of a piece of chocolate cake with chocolate frosting (the same picture as used in Study 1 and Study 3). The moderator for this study was whether the participants were viewing the photos as if they were on Instagram, or as if they were viewing the photo as if they were in an ad in a magazine. We used Taylor's Restaurant (a fictional restaurant) as the advertiser in both situations. We differentiated these through a written description of what type of marketing material that the participants were going to be evaluating before they saw either a Side Angle or Overhead photo of chocolate cake. For the Instagram photos, we created an Instagram account for Taylor's Restaurant and created a logo for the account. The photos were posted on Instagram, and then a screenshot was taken so that the essence of the post could be used in the study. For the Print photos, we created an ad that felt simple and elegant to match the photo of the cake and the logo of Taylor's Restaurant. This was done in Microsoft PowerPoint. For those participants that were evaluating either a Side Angle or Overhead photo for Instagram marketing, they read this description before evaluating the photo:

Below is a post that could potentially be used on the Instagram account that belongs to Taylor's Restaurant. Please take a few moments to examine the post and then click continue to answer some questions about it.

For those participants that were evaluating either a Side Angle or Overhead photo being used for Print, they read this description before evaluating the photo:

Below is a potential print ad for Taylor's Restaurant that would appear in a magazine. Please take a few moments to examine the print ad and then click continue to answer some questions about it.

At the end of the survey, we asked participants what they were asked to evaluate (Print Advertisement, Instagram Post, or I don't remember). If the participant did not select the option of the marketing material that they were evaluating (or selected I don't remember), their data was discarded. The below image shows a visual depiction of the conditions that each participant could be placed in, and the photo that they evaluated:

Participants were asked to evaluate the photo they were shown along a series of dimensions. All questions were asked on a 1-7 scale:

- Please rate Taylor's Restaurant on the following dimensions: Unpleasant (1) to Pleasant (7), Unfavorable (1) to Favorable (7), and Bad (1) to Good (7). These scores are labeled as the 7-value in Appendix D. A composite of these three categories was also created, and labeled as RestaurantEvaluation in Appendix D.
- Please rate to the extent to which you believe the food shown in this picture would be Tasty (1 = Not Tasty to 7 = Tasty), Healthy (1 = Unhealthy to 7 = Healthy), Enjoyable (1 = Not Enjoyable to 7 = Enjoyable), Beneficial (1 = Not Beneficial to 7 = Beneficial), Pleasurable (1 = Not Pleasurable to 7 = Pleasurable), and Nutritious (1 = Not Nutritious to 7 = Nutritious). All of these scores are labeled as the 7-value in Appendix D.
- How likely would you be to visit the restaurant (1 = Not at all likely to 7 = Very likely)? These scores are labeled Visit in Appendix D.
- How likely would you be to order the food shown in this image (1 = Not at all likely to 7 = Very likely)? These scores are labeled Order in Appendix D.
- To what extent do you want to eat this food right now (1 = Not at all to 7 = Very much)? These scores are labeled Desire in Appendix D.
- How likely would you be to interact with this picture if you saw it on social media (1 = Not at all likely to 7 = Very likely)? These scores are labeled SocialMedia in Appendix D.
- Please evaluate your perceptions of Taylor's Restaurant using the following scales (all of them are on a scale of 1 to 7): Unapproachable (1) to Approachable (7); Conservative (1) to Progressive (7); Disagreeable (1) to Personable (7); Traditional (1) to Trendy (7);

Serious (1) to Humorous (7); Slow (1) to Fast (7); Local Restaurant (1) to National Chain (7); Inexpensive (1) to Expensive (7); Dishonest (1) to Honest (7); Unfriendly (1) to Friendly (7); Cookie-Cutter (1) to Unique (7); Dull (1) to Exciting (7); and Feminine (1) to Masculine (7). All of these scores are labeled as the 7-value (Approachable, Progressive, etc.) in Appendix D.

We expected the Instagram Overhead photos would be evaluated more favorably in the categories of Pleasant, Favorable, and Good for the restaurant-related dependent variables; Healthy, Enjoyable, Beneficial, Pleasurable, Nutritious, and Social Media for the food-related dependent variables; and Approachable, Progressive, Personable, Trendy, Friendly, Unique, and Exciting for the brand perception-related dependent variables. We expected the Print Side Angle photos would be evaluated more favorably in Tasty, Visiting, Ordering, and Eating for the food-related dependent variables; and Humorous, Fast, National Chain, Expensive, and Masculine in the brand perception-related dependent variables.

Results

We analyzed the effect that photo angle and media type had on 14 food-related dependent variables (Pleasant, Favorable, Good, RestaurantEvaluation, Tasty, Healthy, Enjoyable, Beneficial, Pleasurable, Nutritious, Visit, Order, Desire, and SocialMedia), and we will discuss the variables that had significant results in what follows.

Favorable. Using Favorable as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a marginally significant main effect for interaction between photo angle and media type ($F(1,241) = 2.956, p < .10$), such that participants evaluated the Instagram

photo from a Side Angle ($M = 6.16$) more favorably than the Instagram photo from Overhead ($M = 5.76$); and that participants evaluated the Print photo from Overhead ($M = 6.07$) more favorably than the Instagram photo from a Side Angle ($M = 5.98$). There was neither a main effect for photo angle ($F(1,241) = 1.454, p > .10$), nor a main effect for media type ($F(1,241) = .184, p > .10$), nor an interaction between photo angle and media type ($F(1,241) = 1.267, p > .10$).

Visit. Using Visit as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a significant main effect for photo angle ($F(1,241) = 3.894, p < .05$), such that participants evaluated the Side Angle image ($M = 5.40$) more favorably than the Overhead image ($M = 5.06$). There was neither a main effect for media type ($F(1,241) = .478, p > .05$), nor an interaction between photo angle and media type ($F(1,241) = .085, p > .05$).

Order. Using Order as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a marginally significant main effect for photo angle ($F(1,241) = 3.328, p < .10$), such that participants evaluated the Side Angle photo ($M = 4.91$) more favorably than the Overhead photo ($M = 4.49$). There was neither a main effect for media type ($F(1,241) = 2.148, p > .10$), nor an interaction between photo angle and media type ($F(1,241) = .033, p > .10$).

Desire. Using Desire as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a marginally significant main effect for photo angle ($F(1,241) = 3.255, p < .10$), such that participants evaluated the Side Angle photo ($M = 4.83$) more favorably than the

Overhead photo ($M = 4.33$). There was neither a main effect for media type ($F(1,241) = 2.463, p > .10$), nor an interaction between photo angle and media type ($F(1,241) = 1.267, p > .10$).

Social Media. Using Social Media as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a significant main effect for photo angle ($F(1,241) = 4.879, p < .05$), such that participants evaluated the Side Angle photo ($M = 3.50$) more favorably than the Overhead photo ($M = 2.93$). There was neither a main effect for media type ($F(1,241) = 1.742, p > .05$), nor an interaction between photo angle and media type ($F(1,241) = 1.619, p > .05$).

We analyzed the effect that photo angle had on thirteen brand perception-related dependent variables (Approachable, Progressive, Personable, Trendy, Humorous, Fast, NationalChain, Expensive, Honest, Friendly, Unique, Exciting, and Masculine), and will discuss the variables that had significant results in what follows.

Progressive. Using Progressive as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a significant main effect for photo angle ($F(1,241) = 9.971, p < .05$), such that participants evaluated the Overhead photo ($M = 5.06$) more favorably than the Side Angle photo ($M = 4.55$). There was neither a main effect for media type ($F(1,241) = .180, p > .05$), nor an interaction between photo angle and media type ($F(1,241) = .037, p > .05$).

Trendy. Using Trendy as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a significant main effect for photo angle ($F(1,241) = 4.956, p < .05$), such that participants evaluated the Overhead photo ($M = 5.34$) more favorably than the Side Angle photo

($M = 4.92$). There was neither a main effect for media type ($F(1,241) = .019, p > .05$), nor an interaction between photo angle and media type ($F(1,241) = .106, p > .05$).

Expensive. Using Expensive as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a significant main effect for photo angle ($F(1,241) = 6.058, p < .05$), such that participants evaluated the Overhead photo ($M = 5.34$) more favorably than the Side Angle image ($M = 5.02$). There was a significant main effect for media type ($F(1,241) = 14.889, p < .05$), such that participants evaluated the Print photo ($M = 5.43$) more favorably than the Instagram photo ($M = 4.94$). There was no main effect for interaction between photo angle and media type ($F(1,241) = 1.369, p > .05$).

Friendly. Using Friendly as a dependent variable, we conducted a two-way ANOVA with photo angle (Side Angle, Overhead) and media type (Instagram, Print) as between-subjects factors. The results revealed a marginally significant main effect for photo angle ($F(1,241) = 3.735, p < .10$), such that participants evaluated the Side Angle photo ($M = 5.48$) more favorably than the Overhead photo ($M = 5.02$). There was neither a main effect for media type ($F(1,241) = .683, p > .10$), nor an interaction between photo angle and media type ($F(1,241) = 1.120, p > .10$).

The other variables were all non-significant for main effects and interactions. Please see Appendix D for full results.

Discussion

Taking our positive results from Study 3 (brand perceptions are influenced by photo angle), we wanted to moderate food photo evaluations and brand perceptions through the media type used for an advertisement. We chose to use Instagram and Print as our two mediums

because we thought that photos used in an Instagram post would be evaluated more favorably from Overhead (especially for brand perception-related dependent variables), while photos used in a Print ad (in a magazine) would be evaluated more favorably from a Side Angle (particularly for the food-related dependent variables). For the photos used in Instagram posts, we thought Overhead photos would be evaluated more favorably because Instagram's user base is a younger demographic and has more of an artistic flair/attentiveness to social trends. For the photos used in Print ads, we thought that Side Angle photos would be evaluated more favorably because Print ads are generally more effective for an older demographic and those that do not have the same artistic flair/attentiveness to social trends like their Instagram-friendly counterparts.

Study 4 achieved most of its desired results. We did find a marginally significant interaction term between photo angle and media type for a restaurant-related dependent variable (Favorable). We found (marginally) significant main effects for photo angle for all actionable intentions (visit the restaurant, order the food, desire to eat the food right now, or interact with the photo on social media). We found a significant main effect for media type for the brand perception-related dependent variable of Expensive. Finally, we found significant main effects for photo angle for four brand perception-related dependent variables (Progressive, Trendy, Expensive, and Friendly) (Friendly was only marginally significant).

In Study 4, we are able to show which angle food should be photographed to create a Favorable restaurant perception. This is important for restaurants when they determine which photo to be used for each type of advertisement utilized in their marketing mix. In our study we show that if a restaurant is placing an advertisement on Instagram they should use a Side Angle photo, as they are evaluated more favorably than Overhead photos (6.16 v 5.76). If a restaurant is placing an advertisement using Print (such as in a magazine) they should use an Overhead photo,

as they are evaluated more favorably than Side Angle photos (6.07 v 5.98). This does not support our hypothesis, and our overall results that Overhead photos should be used when the psychographic persona of the intended consumer has more of an artistic flair/attentiveness to social trends (such as Instagram users). We would like to research this further in future studies and gather more data to provide a more solid conclusion.

Study 4 also provides data that creates implications for actionable intentions based on photo angle. We are grouping the variables of Visit, Order, Desire, and Social Media as one meta-variable of actionable intentions as all four of these are indicative of actual behavior. The other variables that look at perceptions are valuable as perceptions drive behavior, but behavioral-related variables drive direct intentions, which in turn can create value for both the business and consumer. For all of the actionable intentions variables, the Side Angle photos were evaluated more favorably than Overhead photos (Visit – 5.40 v 5.06, Order – 4.91 v 4.49, Desire – 4.83 v 4.33, and Social Media – 3.50 v 2.93). This means that if a restaurant wants a consumer to visit their restaurant, order their food, desire to eat their food right now, or interact with the photo on social media, they should be taking food photos from a Side Angle. Our hypothesis was supported for three out of the four variables (not Social Media – again this goes back to our assumption that Overhead photos appeal to those with an artistic flair/attentiveness to social trends, like the typical persona of heavy social media users).

We found a significant main effect for media type for the brand perception-related dependent variable of Expensive. Our data shows that the food depicted in photos used in Print ads are thought to be more Expensive than food depicted in photos used in Instagram posts (5.43 v 4.94). This could be because Print advertising is generally more expensive than posting on Instagram, and consumers would think that a restaurant has to charge higher prices to afford

advertisements in Print media. This data supports our hypothesis. If a restaurant wants to be perceived as Expensive, they should advertise using Print rather than Instagram.

We found a main effect for photo angle for four out of our thirteen brand perception-related dependent variables (Progressive, Trendy, Expensive, and Friendly) (Friendly was only marginally significant). For Progressive, Trendy, and Expensive, Overhead photos were evaluated more favorably than Side Angle photos (Progressive – 5.06 v 4.55, Trendy - 5.34 v 4.92, and Expensive - 5.34 v 5.02). For Friendly, Side Angle photos were evaluated more favorably than Overhead photos (5.48 v 5.20). This data contradicts the results from Study 3, where Friendly Overhead photos were evaluated more favorably than Side Angle photos. Future research should explore this contradiction more by gathering more data via a variety of moderators to provide conclusive evidence for which photo angle should be used if a restaurant wants to position themselves as Friendly. Three out of the four variables support our hypothesis (not Friendly). This data shows that if a restaurant wants to be perceived as Progressive, Trendy or Expensive they should take food photos from Overhead. As stated before, this ties back to our belief that overhead photos appeal to consumers with more of an artistic flair/attentiveness to social trends because they have an opportunity to appreciate the beauty and creativity that went into designing the photo.

Between the two studies that explore brand perceptions, the only variable that has a main effect in both is Trendy. This creates more concrete evidence that restaurants that want to be considered Trendy should take photos from Overhead.

Conclusion and Future Research

Across our four studies we see at least one main effect in each study and a marginally significant interaction term in two of our studies. In three out of four studies we found a main effect for photo angle, which was the original intention of this research. In both of the two studies that we explored brand perceptions we found main effects for photo angle, which is the start of future research to be explored.

Originally we wanted to be able to create recommendations, with conclusive evidence, for which photo angle to use with distinctive food-positioning platforms, but we did not achieve this desired result across all of our variables. We were able to provide these recommendations for one variable in two different studies. We are able to provide specific recommendations for which photo angle bakeries should use to get consumers to interact with their photos on social media depending on the type of bakery (Traditional bakeries should use Overhead photos and New Age bakeries should use Side Angle photos). We are able to provide specific recommendations for which photo angle restaurants should use if they want to be considered Favorable by consumers depending on which media type they use (Print ads should use Overhead photos, and Instagram posts should use Side Angle photos).

Based on our data we can say that photos taken from a Side Angle are generally evaluated more favorably when dealing with food-related perceptions (taste, aesthetically appealing, and enjoyable) and when dealing with actionable intentions (visiting a restaurant, ordering food, desiring to eat the food right away, and interacting with the photo on social media). As a whole, we can say that photos taken from Overhead are generally evaluated more favorably for brand perceptions around social trends such as trendy or progressive, or other attributes that pertain to artistic flair or “being cool.”

While this research is a good start to exploring the impact of photo angle on food perceptions and evaluation, there is still much to be researched. At times within our studies, our data contradicted our proposed hypotheses based around the theoretical framework. In particular, we found that Side Angle photos were evaluated more favorably than Overhead photos for New Age bakeries in terms of potential interaction on social media, and Overhead photos were evaluated more favorably than Side Angle photos for Traditional bakeries in terms of potential interaction on social media. This goes against other data found in our studies around the photo angle that will generate the most interaction on social media, and we feel that exploring how photo angle impacts the potential interaction on social media needs to be researched further through different moderators to gather more data to provide more directional implications.

Another area of our studies that provided contradictory evidence is around how photo angle impacts the perception of a restaurant being thought of as Friendly. In Study 3 we showed that Overhead photos are evaluated more favorably than Side Angle photos in terms of a restaurant being thought of as Friendly, but in Study 4 we found the opposite. We feel that exploring how photo angle impacts the perception of a restaurant being Friendly needs to be researched further through different moderators to gather more data to provide more directional implications.

Other moderators that we wanted to use to show how photo angle effects evaluation of food photos and consumption are: if an individual or a business posts pictures of food on social media, and if a photo of food was viewed in a cookbook or on a menu.

Another avenue for future research would be to focus on how photo angle impacts interaction on social media. We only asked for potential interaction, but we did not look into any actual behavior. A study could be designed where photos from different angles are posted on a

social media platform and the actual number of likes, comments, and shares are tracked. This could be done for more social media platforms than just Instagram.

All in all, we feel that we have found a gap in the research of photography angles that is worth exploring. We believe that our studies provide a solid foundation for future research, and we look forward to seeing this research progress in the future.

Bibliography

- Asano, E. (2017, January 04). How Much Time Do People Spend on Social Media? *Social Media Today*. Retrieved March 10, 2017, from <http://www.socialmediatoday.com/marketing/how-much-time-do-people-spend-social-media-infographic>
- Chowdhury, R.M., Olsen, G.D. and Pracejus, J.W. (2008). Affective responses to images in print advertising: affect integration in a simultaneous presentation context. *Journal of Advertising*, 37(3), 7-18.
- Coary, S., & Poor, M. (2016). How consumer-generated images shape important consumption outcomes in the food domain. *Journal of Consumer Marketing*, 33(1), 1-8.
- Deresiewicz, W. (2012, October 26). A Matter of Taste? *The New York Times*.
- Hung, I. W., & Mukhopadhyay, A. (2012). Lenses of the heart: How actors' and observers' perspectives influence emotional experiences. *Journal of Consumer Research*, 38(6), 1103–1115.
- Instagram. #food. (n.d.) Retrieved March 10, 2017 from <https://www.instagram.com/explore/tags/food/>
- Jiang, Y., Adaval, R., Steinhart, Y., & Wyer, R. S. (2014). Imagining Yourself in the Scene: The Interactive Effects of Goal-Driven Self-Imagery and Visual Perspectives on Consumer Behavior. *Journal of Consumer Research*, 41(2), 418-435.
- Libby, L. K., & Eibach, R. P. (2011). Visual Perspective in Mental Imagery: A Representational Tool that Functions in Judgment, Emotion, and Self-Insight. *Advances in Experimental Social Psychology*, 44, 186-237.
- Madzharov, A.V. and Block, L.G. (2010). Effects of product unit image on consumption of snack foods. *Journal of Consumer Psychology*, 20(4), 398-409.
- Meyers-Levy, J., & Peracchio, L. A. (1992). Getting an Angle in Advertising: The Effect of Camera Angle on Product Evaluations. *Journal of Marketing Research*, 29(4), 454.
- Mitchell, W.T. (1986), *Iconology: Image, Text, Ideology*, University of Chicago Press, Chicago, IL, p.125
- Peracchio, L. A., & Meyers-Levy, J. (2005). Using stylistic properties of ad pictures to communicate with consumers. *Journal of Consumer Research*, 32, 29–40.
- Siguaw, J. A., Mattila, A., & Austin, J. R. (1999). The Brand-Personality Scale: An Application for Restaurants. *Cornell Hotel and Restaurant Administration Quarterly*, 40(3), 48-55.
- Zhang, J., & Yang, X. (2015). Stylistic properties and regulatory fit: Examining the role of self-regulatory focus in the effectiveness of an actor's v. observer's visual perspective. *Journal of Consumer Psychology*, 25(3), 449-458.

Appendix A

Variable	HealthyAngle	IndulgAng	Angle Total	HealthyOverhead	IndulgOverhead	Over Total	Image Angle P-value
ImageEval	7.60	7.41	7.51	7.36	6.99	7.17	0.055
OverallTaste	7.80	7.77	7.79	7.44	7.43	7.44	0.031
OverallHealth	8.43	2.36	5.39	8.25	2.10	5.10	0.130
Order	5.29	5.17	5.23	5.10	4.97	5.04	0.411
SocialMedia	4.50	4.36	4.43	4.58	4.32	4.45	0.946
Significant							

Variable	HealthyAngle	HealthyOverhead	HealthyTotal	IndulgAng	IndulgOverhead	IndulgTotal	Food Type P-value
ImageEval	7.60	7.36	7.48	7.41	6.99	7.20	0.106
OverallTaste	7.80	7.44	7.62	7.77	7.43	7.60	0.946
OverallHealth	8.43	8.25	5.34	2.36	2.10	2.24	0.000
Order	5.29	5.10	5.20	5.17	4.97	5.07	0.585
SocialMedia	4.50	4.58	5.54	4.36	4.32	4.34	0.465

Variable	Food Type*Angle P-value
ImageEval	0.601
OverallTaste	0.956
Overall Health	0.786
Order	0.974
SocialMedia	0.835

Appendix B

Variable	NewAngle	TradAngle	Total Angle	NewOverhead	TradOverhead	Total Overhead	Image Angle P-value
Tasty	6.12	6.42	6.27	6.00	6.20	6.10	0.262
Healthy	3.49	3.72	3.60	3.65	3.37	3.51	0.689
Enjoyable	6.16	6.44	6.30	5.92	6.20	6.06	0.134
Beneficial	4.37	4.72	4.54	4.24	4.53	4.39	0.462
Pleasurable	6.24	6.40	6.32	6.02	6.20	6.11	0.176
Nutritious	3.73	3.88	3.80	4.04	3.88	3.96	0.525
Visit	5.51	5.54	5.52	5.20	5.57	5.39	0.527
Order	5.06	5.40	5.23	4.84	5.18	5.01	0.361
Desire	4.94	5.24	5.09	4.73	5.08	4.91	0.501
SocialMedia	4.43	4.04	4.24	3.69	4.24	3.97	0.351

Variable	NewAngle	NewOverhead	Total New	TradAngle	TradOverhead	Total Trad	Brand P-value
Tasty	6.12	6.00	6.06	6.42	6.20	6.31	0.089
Healthy	3.49	3.65	3.57	3.72	3.37	3.55	0.906
Enjoyable	6.16	5.92	6.04	6.44	6.20	6.32	0.073
Beneficial	4.37	4.24	4.31	4.72	4.53	4.63	0.143
Pleasurable	6.24	6.02	6.13	6.40	6.20	6.30	0.251
Nutritious	3.73	4.04	3.88	3.88	3.88	3.88	0.986
Visit	5.51	5.20	5.36	5.54	5.57	5.56	0.360
Order	5.06	4.84	4.95	5.40	5.18	5.29	0.153
Desire	4.94	4.73	4.84	5.24	5.08	5.16	0.235
SocialMedia	4.43	3.69	4.07	4.04	4.24	4.14	0.779
Significant							

Variable	Image Angle*Brand P-value
Tasty	0.741
Healthy	0.277
Enjoyable	0.993
Beneficial	0.886
Pleasurable	0.950
Nutritious	0.519
Visit	0.437
Order	0.990
Desire	0.929
SocialMedia	0.099
Significant	

Appendix C

Variable	Angle Mean	Overhead Mean	Image Angle P-Value
Approachable	5.47	5.98	0.018
Progressive	4.67	5.14	0.120
Personable	5.31	5.76	0.025
Trendy	4.55	5.12	0.075
Humorous	3.98	3.92	0.790
Fast	4.31	4.3	0.827
NationalChain	3.16	3.18	0.769
Expensive	4.45	4.38	0.904
Honest	4.92	5.34	0.110
Friendly	5.35	5.68	0.147
Unique	4.84	4.98	0.839
Exciting	4.67	5.14	0.100
Masculine	4.04	3.98	0.957
Significant			

Variable	Angle Mean	Overhead Mean	Image Angle P-Value
Tasty	5.96	6.06	0.590
Healthy	2.63	2.38	0.156
Enjoyable	6	6.1	0.609
Beneficial	3.78	3.48	0.272
Pleasurable	6.22	6.14	0.827
Nutritious	2.96	2.8	0.458
Visit	4.94	5	0.935
Order	4.8	4.78	0.587
Desire	4.47	4.92	0.685
SocialMedia	4.06	3.58	0.148

Appendix D

Variable	InstaAngle	PrintAngle	Angle Total	InstaOverhead	PrintOverhead	Overhead Total	Image Angle P-Value
Pleasant	6.05	6.02	6.03	5.77	6.10	5.93	0.479
Favorable	6.16	5.98	6.07	5.76	6.07	5.91	0.229
Good	6.13	6.00	6.06	5.76	5.98	5.87	0.168
RestaurantEvaluation	6.11	6.00	6.05	5.76	6.05	5.90	0.233
Tasty	6.16	6.27	6.22	6.08	6.08	6.18	0.288
Healthy	2.68	2.58	2.63	2.39	2.85	2.61	0.978
Enjoyable	6.16	6.26	6.21	6.08	6.08	6.08	0.333
Beneficial	3.81	4.05	3.93	3.98	3.90	3.94	0.954
Pleasurable	6.18	6.23	6.20	5.89	6.10	5.99	0.135
Nutritious	2.97	3.08	3.02	2.65	3.08	2.86	0.429
Visit	5.37	5.42	5.40	4.95	5.17	5.06	0.050
Order	4.77	5.05	4.91	4.29	4.70	4.49	0.069
Desire	4.84	4.82	4.83	3.84	4.83	4.33	0.072
SocialMedia	3.84	3.16	3.50	2.89	2.98	2.93	0.028
Significant							

Variable	InstaAngle	InstaOverhead	Insta Total	PrintAngle	PrintOverhead	Print Total	Media Type P-Value
Pleasant	6.05	5.77	5.91	6.02	6.10	6.06	0.280
Favorable	6.16	5.76	5.96	5.98	6.07	6.02	0.668
Good	6.13	5.76	5.94	6.00	5.98	5.99	0.790
RestaurantEvaluation	6.11	5.76	5.93	6.00	6.05	6.02	0.530
Tasty	6.16	6.08	6.12	6.27	6.08	6.18	0.636
Healthy	2.68	2.39	2.53	2.58	2.85	2.71	0.347
Enjoyable	6.16	6.08	6.12	6.26	6.08	6.17	0.711
Beneficial	3.81	3.98	3.90	4.05	3.90	3.98	0.675
Pleasurable	6.18	5.89	6.03	6.23	6.10	6.16	0.351
Nutritious	2.97	2.65	2.81	3.08	3.08	3.08	0.174
Visit	5.37	4.95	5.16	5.42	5.17	5.30	0.490
Order	4.77	4.29	4.53	5.05	4.70	4.88	0.144
Desire	4.84	3.84	4.34	4.82	4.83	4.83	0.118
SocialMedia	3.84	2.89	3.36	3.16	2.98	3.07	0.188

Variable	Image Angle*Media Type P-value
Pleasant	0.217
Favorable	0.087*
Good	0.263
RestuarantEvaluation	0.145
Tasty	0.715
Healthy	0.161
Enjoyable	0.710
Beneficial	0.449
Pleasurable	0.566
Nutritious	0.461
Visit	0.771
Order	0.856
Desire	0.261
SocialMedia	0.204
Significant	

Variable	InstaAngle	PrintAngle	Angle Total	InstaOverhead	PrintOverhead	Overhead Total	Image Angle P-Value
Approachable	5.77	5.39	5.58	5.50	5.55	5.52	0.720
Progressive	4.53	4.56	4.55	5.00	5.12	5.06	0.002
Personable	5.19	5.18	5.19	5.10	5.35	5.22	0.812
Trendy	4.97	4.87	4.92	5.31	5.37	5.34	0.027
Humorous	3.73	3.44	3.58	3.58	3.48	3.53	0.787
Fast	3.77	3.84	3.81	3.65	3.72	3.68	0.428
NationalChain	2.61	2.61	2.61	2.58	2.62	2.60	0.987
Expensive	4.69	5.35	5.02	5.18	5.52	5.34	0.015
Honest	5.21	5.15	5.18	5.08	4.98	5.03	0.322
Friendly	5.61	5.34	5.48	5.18	5.22	5.20	0.054
Unique	4.92	4.66	4.79	4.87	5.00	4.93	0.395
Exciting	5.05	4.69	4.87	4.89	4.98	4.93	0.675
Masculine	3.71	3.92	3.81	3.74	3.75	3.75	0.618
Significant							

Variable	InstaAngle	InstaOverhead	Insta Total	PrintAngle	PrintOverhead	Print Total	Media Type P-Value
Approachable	5.77	5.50	5.64	5.39	5.55	5.47	0.254
Progressive	4.53	5.00	4.77	4.56	5.12	4.84	0.672
Personable	5.19	5.10	5.15	5.18	5.35	5.26	0.415
Trendy	4.97	5.31	5.14	4.87	5.37	5.11	0.890
Humorous	3.73	3.58	3.65	3.44	3.48	3.46	0.233
Fast	3.77	3.65	3.71	3.84	3.72	3.78	0.696
NationalChain	2.61	2.58	2.60	2.61	2.62	2.61	0.994
Expensive	4.69	5.18	4.94	5.35	5.52	5.43	0.000
Honest	5.21	5.08	5.15	5.15	4.98	5.07	0.540
Friendly	5.61	5.18	5.40	5.34	5.22	5.28	0.410
Unique	4.92	4.87	4.90	4.66	5.00	4.83	0.716
Exciting	5.05	4.89	4.97	4.69	4.98	4.84	0.405
Masculine	3.71	3.74	3.73	3.92	3.75	3.84	0.430
Significant							

Variable	Image Angle*MediaType P-value
Approachable	0.162
Progressive	0.848
Personable	0.347
Trendy	0.745
Humorous	0.616
Fast	0.930
NationalChain	0.911
Expensive	0.243
Honest	0.836
Friendly	0.291
Unique	0.239
Exciting	0.215
Masculine	0.466