

# What's in a Name? Do Labels Influence People's Liking for Cookies?

Casey G. Swinkels<sup>1</sup> and Traci A. Giuliano<sup>2</sup>

<sup>1</sup> Murchison Middle School, Austin, Texas

<sup>2</sup> Southwestern University, Georgetown, TX

## Summary

Research shows that if a food product is labeled with a fancy name, people like it more than they would otherwise. Similarly, some people tend to think of healthy foods as less satisfying. The purpose of this study was to extend previous research on the effects of labels on people's preference for certain foods using a cookie taste test. It was predicted that cookies with a fancy label ("Grandma's favorite recipe") would be rated higher than cookies with a plain label ("Chocolate chip cookie"), and that cookies with a healthy label ("Low-fat, 80-calorie cookie") would be rated the lowest. To test this prediction, 72 participants (57 women, 15 men) tasted and rated a cookie with one of the three different labels. The results showed that there were no significant differences in the rating for the cookies with the fancy label ( $M = 7.55$ ), the plain label ( $M = 6.85$ ), or the healthy label ( $M = 7.58$ ). Although cookie ratings did not vary significantly as a function of label in the current study, previous research has shown that labels do influence how much people like certain foods.

**Received:** May 12, 2014; **Accepted:** Aug 28 2014;  
**Published:** Nov 9, 2014

**Copyright:** (C) 2014 Swinkels et al. All JEI articles are distributed under the attribution non-commercial, no derivative license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>). This means that anyone is free to share, copy and distribute an unaltered article for non-commercial purposes provided the original author and source is credited.

## Introduction

Since 1980, child and adolescent obesity rates in the United States have nearly tripled (1). In fact, today's children are the first generation to be less active and overall less physically fit than their own parents (2). One reason for these disconcerting facts is that today's children do not exercise enough, resulting in weight gain (3). In particular, children spend a large portion of their time inside using various technological devices instead of playing outside or exercising (4). Another reason that children are overweight is that many children do not eat healthy foods. Specifically, children eat foods high in saturated fat and carbohydrates (such as junk food and sugary sodas) rather than healthier options, such as salad, fruits, and fish (4). Many children do not eat

healthy foods because they claim that they do not like them. Although in some cases this may be true, children may also associate the label of "healthy" with the idea that food will not taste good. If there was a way to reduce this association, perhaps children would eat healthier foods. One possible way to do this is to disguise healthy foods by labeling them differently. The purpose of this project was to address whether labels influence people's liking for healthy foods.

The idea that people's preference for healthy food can be influenced by knowing what's in the food is the basis of several well-known cook books, including Jessica Seinfeld's *Deceptively Delicious*. In this book, Seinfeld notes that most children will not notice if there are vegetables in the foods they eat every day if they are not told about them (5). To demonstrate her point, she hid butternut squash in her children's mashed potatoes and they ate them without noticing. Seinfeld also notes that because she does not tell her children that there are vegetables in their foods, they eat them without complaining.

Though Seinfeld's idea was carefully thought out, it was not scientifically tested in a rigorous manner. However, researchers at the Yale food laboratory have conducted studies on the topic of labels and have discovered that foods labeled as "healthy" are sometimes perceived to be less flavorful than the same foods not labeled "healthy" (6). One of the most well known food scientists in the area, Brian Wansink, was influenced by early studies conducted during World War II. These studies showed that soldiers thought that the organ meats that they had been eating tasted fine until they learned what they were actually consuming (7). The studies showed that many of the soldiers then thought of their meals as "repulsive" or "disgusting." However, when their meals were described as "variety meats," the soldiers liked them much more. This inspired Wansink and Park to conduct an experiment, which found that American consumers tend to dislike the taste of soy or soybeans because they convince themselves that they do not like the taste of soy, a food perceived to be healthy (8). In a study with two groups of people, one group was given an energy bar that was labeled as containing "10 grams of protein" whereas the other group was given an energy bar that was labeled as containing "10 grams of soy protein." The people in the second group rated

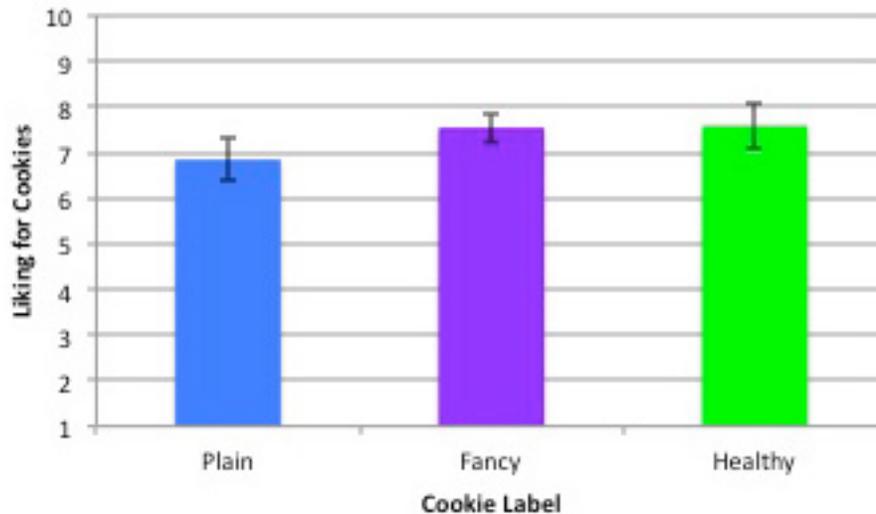


Figure 1: Average liking for the cookies in each condition (on a scale from 1 to 10)

their energy bars as tasting “old” or even “nasty”, though both groups were given the exact same bar. Wansink et al. note that this is most likely because people think of healthy foods as less tasty and less satisfying. Their results suggest that people have lower expectations of foods labeled as “healthy” (6).

Wansink and colleagues have also conducted studies on the influence that fancy labels have on people’s liking for certain foods (9). Wansink et al. argue that if a food product is labeled with a fancy name, people like it more than they would otherwise (6). Wansink et al. give the example that an apple pie with a fancy label (i.e., “country fresh apple pie”) would be liked more than a pie labeled plainly (i.e., “apple pie”) (9). Specifically, even though this pie may not be fresh or actually made in the country, it would make people think of homemade pie. Wansink et al. suggest that this is because when people think of “country fresh,” they think of an old-fashioned homemade pie that was just baked (9). In other words, people associate fancy labels with foods being specially prepared or made with a secret ingredient. In one experiment, Wansink et al. served people the entrée “Succulent Italian Seafood Filet” which, as expected, was liked more than the entrée “Seafood Filet,” because of its fancy title (9).

The purpose of the present study was to extend previous research on the effects of labels on people’s liking for certain foods. For this particular experiment, a dessert (i.e., chocolate chip cookies) was chosen because, as found by Wansink et al., the impact of labels is stronger on foods perceived to be less healthy (e.g., desserts) than on foods that are thought of as nutritious (e.g., entrées or appetizers) (6). Based on the literature reviewed, two specific predictions were made. First, we

predicted that the fancily-labeled cookie would get higher ratings from the people eating it than the plainly-labeled cookie (the control group). This prediction was based on studies showing that foods labeled with fancy names sell better and are rated as more appealing than are foods labeled with plain names (10) (9). Second, we predicted that the healthily-labeled cookie would get lower ratings from the people eating it than the plainly-labeled cookie (the control group). This prediction was based on studies showing that foods labeled “healthy” or “diet” influence people to think that the foods will not taste as good because they think that the words “healthy” and “diet” suggest that the foods are lower in sugar and/or flavor (6).

## Results

To test our predictions, a 1 x 3 between-subjects experimental design was used in which each participant tasted a relatively healthy version of a chocolate chip cookie labeled one of three different ways. A total of 72 participants (57 women, 15 men) rated the cookie. The independent variable was the label on the cookie and it had three levels: fancy (i.e., “Grandma’s favorite recipe”), plain (i.e., “Chocolate chip cookie”), and healthy (i.e., “Low-fat 80-calorie chocolate chip cookie”). The dependent variable was people’s liking for the cookies as rated on a 10-point scale from 1 (Not at all Delicious) to 10 (Very Delicious).

Although there was a trend for people to like the fancy cookie (i.e., Grandma’s favorite recipe;  $M = 7.55$ ) more than the plain cookie (i.e., chocolate chip cookie;  $M = 6.85$ ),  $t(46) = 1.20$ ,  $p = 0.11$ , there was not a statistically significant difference in the data (Figure 1). Surprisingly, there was a trend for people to like the healthy cookie

(i.e., low-fat, 80-calorie cookie;  $M = 7.58$ ) more than the plain cookie (i.e., chocolate chip cookie;  $M = 6.85$ ), although this difference was not statistically significant,  $t(48) = -0.109$ ,  $p = 0.28$ . Participants liked the healthy cookie (i.e., low-fat, 80-calorie cookie;  $M = 7.58$ ) and the fancy cookie (i.e., grandma's favorite recipe;  $M = 7.55$ ) about the same,  $t(44) = 0.062$ ,  $p = 0.95$ . The ranges for the three cookies labeled differently were similar. The fancy cookie had a range of 7, with responses from 3 to 10; the plain and healthy cookie labels each had ranges of 8, both with responses from 2 to 10.

## Discussion

Although previous research has shown that labels influence how much people like certain foods, in the current study cookie taste did not vary significantly as a function of label (6) (8) (9). There were some interesting trends in the data, however. First, the fancy cookie was liked somewhat more than the plain cookie, as predicted by the hypothesis, although these results were not statistically significant. Unexpectedly, the mean rating for the healthy cookie was greater than the rating for the plain cookie. It is hypothesized that this trend may be due to a contrast effect (6). That is, as desserts are not typically thought of as healthy or nutritious foods, when people saw the healthy cookie, they may have assumed it would be less tasty than a normal cookie. Thus, when the participants actually liked the healthy cookie, it disconfirmed their original beliefs, causing them to rate the cookie higher than they would have otherwise.

There are at least two potential limitations in the present study. One limitation is that the cookies may have tasted too good, resulting in a "ceiling effect" in participants' ratings. If the cookies had tasted too good, then everyone might rate them highly, which leaves little room for the liking ratings to vary as a function of label. In other words, the label has less of an impact if the cookies are so good that people like them no matter what. The evidence for this limitation is that some of the participants remarked, "there's no way that this cookie can only have 80 calories" and "mmmmm... delicious." In addition, the cookies all got very high ratings, regardless of which label they had. Future research should be conducted using cookies that taste slightly less good so that the label might have a larger impact on cookie rating. A related limitation is that because people generally associate cookies with being unhealthy, they may not have necessarily believed that the cookies were actually healthy. In pilot testing, one participant commented that she did not believe the label because the cookie tasted so good. To address this issue, future research should not be conducted using desserts that taste so good that people do not believe the dessert is healthy. Otherwise, there may be a contrast effect in the data, and people

might rate the healthy version of the food much higher than they might have if it had a plain label (6).

There could be many practical implications of data resulting from further research in this field. Food label research is especially important to restaurants. Restaurant owners could apply the idea that fancy labels may influence customers' liking of their food to help them to be more profitable and become more well known. In the case of the cookie with the healthy and plain labels, parents can use this knowledge to get their children to eat healthier foods by not telling them that there are healthy ingredients in the everyday foods they normally eat. This knowledge may be especially important for school cafeterias. As of 2008, more than one third of the nation's children and adolescents were either overweight or obese (1). Given that studies show a link between a healthier diet and improved cardiovascular function, perhaps getting children to like healthier foods could be a positive first step toward stopping the decline in overall health and fitness of today's children (14).

## Methods

### Pilot Test

A pilot test was first conducted in order to find a healthy recipe appropriate for this project. In this pilot test, two participants blind tasted 5 different healthy recipes (3 brownie recipes and 2 cookie recipes) and rated their liking for the recipe on a scale from 1 to 10. They also wrote down any comments about the flavor or texture of the cookie or the brownie. One brownie recipe used black beans in place of water, oil, and eggs. Although the black bean brownie tasted fairly delicious, the cookie was chosen for this study because of its normal appearance and because it was more convenient (i.e., it holds its shape and looks presentable even when placed in a plastic bag). This cookie recipe qualifies as healthy because compared to the popular recipe for Nestle's Tollhouse cookies, these cookies had 80 calories, less than half the fat, half the sugar, half the sodium, and one third of the cholesterol (11).

### Participants

Data were collected from 72 volunteers (57 women and 15 men) aged 18 or older. Although participants were not asked their age, all participants signed a consent form indicating that they were at least 18 years of age. Participants were approached at the kickball fields near a middle school in Austin, Texas, in the morning where the weekly kickball games take place. Although 24 participants were randomly assigned to each condition, 2 participants assigned to the *fancy label* condition mistakenly wrote down that they had the "Chocolate chip cookie" instead of "Grandma's favorite recipe." Those participants (because they believed they had a

“plainly” labeled cookie) were added to the control group (the *plain label* condition), resulting in 26 participants in the *plain label* condition, 22 participants in the *fancy label* condition, and 24 participants in the *healthy label* condition.

### Materials

Materials used in this experiment included (a) supplies to conduct the taste test (i.e., 72 consent forms and rating scales, 72 cookie labels (printed on small white strips of paper approximately ½” high and 3” wide), 72 sandwich-sized bags to hold the cookies and labels, a bag of pens for participants to rate the cookies, and two large envelopes to hold the participants’ responses and consent forms); (b) basic kitchen supplies needed to bake the cookies (i.e., oven, mixing bowl, whisk, measuring cups, cookie sheets); and (c) the ingredients necessary to make the cookies (i.e., non-stick cooking spray, 1 ½ cups of butter, 3 cups granulated sugar, 3 cups brown sugar, 3 cups mini semi-sweet chocolate chips, 6 cups flour, 6 egg whites, and 3 teaspoons of baking soda).

### Procedure

Potential participants were approached by the experimenter and asked if they would like to taste a cookie and then to rate how much they liked it. After agreeing to participate and signing the consent form, participants were given a cookie in a plastic sandwich bag that contained one of the following labels on a piece of paper inside the bag: “Grandma’s favorite recipe,” “Chocolate chip cookie,” or “Low-fat, 80-calorie cookie.” Participants were also given a pen, and after writing down the type of cookie they had on their response sheet, they tasted the cookie and then rated how much they liked the cookie. Participants then placed their response into a large envelope and were thanked. The experiment took approximately 2-3 minutes for each participant. At the end of the experiment, a debriefing email was sent to participants who put their email addresses on the consent forms for an overview of the study and the results.

### Controls

A number of control procedures were used in this experiment to eliminate extraneous variables. First, the size of cookie was controlled for so as not to influence how much people liked the cookie depending on its size (e.g., some people might like the cookie more if it was large). The size of the cookie was controlled by using the same size scoop (i.e., a round tablespoon) to form the batter. A second control was to standardize the type of cookie, to ensure that all of the cookies tasted the same. To control for the cookie type, all of the cookies

were made using the same recipe called “80 calorie chocolate chip cookie”, which was found on the website sparkrecipe.com (11). Another important variable to control was the temperature of the cookie. The temperature of the cookie was controlled for by having all of the cookies served at room temperature. Another factor to control was the freshness of the cookie. All cookies were made on the same day (the night before the experiment was conducted) to ensure that some were not fresher than others. The next two variables involve participants being influenced by the expectations of others. Experimenter bias occurs when the experimenter unknowingly influences the participants’ responses because the experimenter is not “blind” to the condition (12). To control for experimenter bias, descriptions of the cookies were written on the inside of a folded slip of paper so that the experimenter did not know which condition each cookie was in and therefore did not accidentally influence the participant’s liking of the cookie. Lastly, social desirability bias occurs when participants think that by giving their honest opinion, especially if it is an unpopular one, that they will not be perceived as normal or likable (12). To reduce social desirability, the experimenter asked the participants to give their honest opinion about the taste of the cookie, not what they thought their response should be, or what they thought that others’ responses would be.

### Statistical Analysis

Three independent samples t-tests were conducted to analyze the data. One-tailed t-tests (rather than a one-way ANOVA) were used because these were a *priori* predictions.

### References

1. Childhood obesity facts. (2012). Retrieved October 27, 2012, from <http://www.cdc.gov/healthyyouth/obesity/facts.htm>
2. Tomkinson, R., Leger, L A., Olds, T. S., & Cazorla, G. (2003). Secular trends in the performance of children and adolescents (1980-2000): An analysis of 55 studies of the 20m shuttle run test in 11 countries. *Sports Medicine*, 33(4), 285-300.
3. Laguna, M., Ruiz, J. R., Gallardo, C., Garcia-Pastor, T., Lara, M., & Aznar, S. (2013). Obesity and physical activity patterns in children and adolescents. *Journal of Pediatrics and Child Health*, 49(11), 942-940.
4. Gielen, S., & Hambrecht, R. (2004). The childhood obesity epidemic: Impact on endothelial function. *Circulation*, 109, 1911-1913.
5. Seinfeld, J. (2007). *Deceptively delicious*. New York, NY: HarperCollins.
6. Wansink, B., Van Ittersum, K., & Painter, J. E. (2004). How diet and health labels influence taste and

- satiation. *Journal of Food Science*, 69(9), 341-346.
7. Wansink, B. (2006). *Mindless eating*. New York, NY: Bantam Dell.
  8. Wansink, B., & Park, S. (2002). Sensory suggestions and labeling: Do soy labels bias taste? *Journal of Sensory Studies*, 17, 483-491.
  9. Wansink, B., Van Ittersum, K., & Painter, J. E. (2005). How descriptive food names bias sensory perceptions in restaurants. *Food Quality and Preferences*, 16, 393-400.
  10. Wansink, B., Painter, J. E., & Van Ittersum, K., (2001). Descriptive menu labels' effect on sales. *Cornell Hotel and Restaurant Administrative Quarterly*, 42(December), 68-72.
  11. Terriangel (2008). 80-calorie chocolate chip cookies. Retrieved from <http://recipes.sparkpeople.com/recipe-detail.asp?recipe=62425>.
  12. Leary, M. R. (2012). *Introduction to behavioral research methods* (6th ed.). Boston, MA: Pearson.
  13. Osborne, R., Ackley, B., & Giuliano, T. (2008). The "skinny" on coffee drinkers: Gender differences in healthy beverage choices. *Psi Chi Journal of Undergraduate Research*, 13(4), 159-163.
  14. Woo , K. S., Chook, P., Yu, C. W., Sung, R., Qiao, M, Leung, S.,...Celermajer, D. S. (2004). *Circulation*, 109, 1981-1986.