The Effect of Motion on Food Appeal

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Across 2 experiments we show that depictions of food with implied-motion lead to enhanced evaluations of food attractiveness. We argue that this demonstrates an overextension association between motion and freshness. We suggest that this can be used to promote healthier food choices and consumption by increasing their appeal via implied-motion.

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EXTENDED ABSTRACT

Although many factors influence consumers’ food choice and consumption, freshness emerges as a key driver of consumer evaluations of food (e.g., Heenan, Hamid, Dufour, Harvey, & Delahunty, 2009.) To evaluate freshness people use visual cues mostly (Péneau, Brockhoff, Escher, & Nuessli, 2007).

Motion as a Cue for Freshness

The ability to automatically associate movement with freshness may be one such mechanism that has served humans well in primitive environments. In nature, there is a close association between food movement and its freshness. Living animals move, and healthy animals display more motion than do diseased or infected animals. Thus, the motion of animals is associated with meat freshness and quality.

The link between motion and freshness extends to plant-based food sources. Live growing edible plants, fruits, and vegetables move as they sway in the wind, fall or are picked from the tree. The instant they are plucked, separated from the ground or from the parent plant, they experience postharvest decay and lose their freshness (e.g., Irtwange, 2006). Interestingly, even some inanimate foods are fresher when in motion. Running water, for instance, is fresher than stagnant water because the latter enhances bacterial proliferation (e.g., Palmore et al, 2009), and chemical contamination (Rossignol-Strick, 1987).

However, the question arises whether the inference of freshness from movement would be overextended to the modern environment, where it no longer applies.

Hence, the following hypothesis:

Hypothesis 1 Food will be rated as fresher when shown moving vs. still.

Hypothesis 2 Food will be rated as more appealing when shown moving vs. still.

Hypothesis 3 The relationship between food motion and food appeal will be mediated by perceived freshness.

Study 1

Methods

Participants (N = 105) were recruited online on Amazon Mechanical Turk. They completed the study in exchange for payment. We chose drinks as our stimuli since drink can easily and naturally be shown in movement even in still pictures, by being poured into glasses. Further, drinks are often presented as moving, being poured into glasses, in marketing communications. Participants were shown pictures of two orange juice brands and asked to evaluate them. The pictures of each juice were similar but one juice was displayed being poured into a glass. The quantity of juice in the glass in both pictures was similar. The brand of orange juice was varied so as to distract participants from the true purpose of the studies.

Participants were randomly assigned to experimental groups, such that for half of the participants the juice being poured (motion) was displayed first, the still juice (control) second, and for the other order the order was reversed. Since brand and order were not variables of interest, Tropicana was always displayed first, and Simply Orange was always displayed second.

After viewing each brand of orange juice participants were asked to answer “how appealing is the orange juice?” They answered on a scale of 1 (= not at all appealing) to 9 (= very appealing). They then viewed the other brand and answered a similar question.

Results and Discussion

We analyzed the results using a mixed model with juice brand / position as a repeated factor and the covariance structure specified as compound symmetry. The model included movement, juice brand / position, and the interaction between the two. There was a significant effect of movement on how appealing the juice was rated as. Moving juice was rated as more appealing (M = 7.1, SD = 1.79) than still juice (M = 6.7, SD = 1.62). The effect was significant at a .01 level: F(1, 104) = 5.75. There was no interaction of juice brand or order on the effect, such that the interaction between juice brand and movement was not significant. Whether motion appeared first or second did not matter for our effects.

The results of study 1 indicate that food movement enhances food appeal, supporting H1.

Study 2

Methods

Study 2 was a direct replication of Study 1 consisting of a new set of participants (N = 58) drawn from the same population. This time participants answered an additional question concerning their perceived freshness of the food, in addition to perceived food appeal. Specifically, participants rated how fresh they perceived the juice to be by answering the question “How fresh is the orange juice?” They rated freshness on a 9 point Likert scale anchored by 1 (= very un-fresh) to 9 (= very fresh).

Results and Discussion

The results were analyzed using a mixed model, as before. Participants rated orange juice as more appealing when they saw it in motion (M = 6.84, SD = .54) rather than still (M = 6.38, SD = 1.76). The effect was significant at a .002 level, F(1, 55) = 9.78. Juice displayed in motion was also rated as fresher (M = 6.26, SD = 1.66) than still juice (M = 5.72, SD = 1.84). This effect too was significant at a .004 level, F(1, 55) = 8.75, supporting H2.

Following Krull and MacKinnon (2001), we tested the role of perceived food freshness as a mediator of the relation between food

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motion and food appeal while measuring all variables at the food motion level.

The analysis shows that perceived freshness mediated the effects of motion on attractiveness, supporting H3. Thus, it appears that motion led participants to perceive food as fresher. This increase in perceived freshness due to motion is what in turn led to increased appeal of the juice.

The findings develop our understanding of how consumers assess food quality. They also contribute to our knowledge of how heuristic cues can lead to inferences of product quality, and how those cues may be misapplied beyond the circumstances where they genuinely apply.

The findings offer practical implications - a potential avenue for promoting healthier eating, as marketers can employ motion to promote healthy eating in retail settings as well as cafeterias and other settings where food choices are made.

REFERENCES


