The Blender Effect: Physical Food State Influences Consumers’ Perceptions and Consumption

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Four studies demonstrate that altering the physical state (e.g., solid, semi-solid, liquid) of a food product, a food pictured on a package, or a food on display through mechanical processing (e.g., juicing, blending) influences healthiness perceptions and consumption, a phenomenon we term the blender effect.

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EXTENDED ABSTRACT

It is increasingly common to find the same food available in multiple physical states (i.e., solid, liquid) including the raw (i.e., non-mechanically altered) physical state as well as other physical states that represent different degrees of processing (i.e., mechanical alteration). For instance, at a grocery store a consumer might find apples in their raw physical state as a solid (i.e., whole fruit), in a processed physical state as a semi-solid (i.e., applesauce), and in a processed physical state as a liquid (i.e., apple juice). Additionally, companies often place images of foods on packages, and the foods in these images can be in different physical states (e.g., an orange versus a glass of orange juice). Sometimes changing the physical state of a food involves adding ingredients. In this research, we hold the ingredients constant. We ask: would altering the physical state of a food product, a food pictured on a package, or a food on display influence consumers' product perceptions and consumption decisions?

We build on research which shows that consumers mentally categorize foods as healthy or unhealthy (Chernev 2011), and these categories have a graded structure (Barsalou 1983; 1985) so that foods that are more representative of the category would be perceived as healthier than foods that are less representative of the category. We link this work related to categorization with work in the domain of non-food products, which shows that physical product differences influence categorization (Trudel and Argo 2013). We predict that a blender effect will occur such that altering the physical state of a food will influence how representative the food is of the broader evaluative category (healthy or unhealthy) and ultimately healthiness perceptions.

We demonstrate the blender effect in four experimental studies. First, in Study 1A we have participants view equal volumes of food in a raw/solid state (i.e., an apple), a processed/solid state (i.e., apple slices), or a processed/semi-solid (i.e., apple sauce). We show that individuals perceive the food as healthier in the raw physical state than foods in their raw state being perceived as healthier than foods that are less representative of the category. We also show that the blender effect is mediated by category representativeness. Then, in Study 1B we rule out an alternative explanation related to healthiness perceptions being tied to a specific physical state.

In Study 2 we vary the physical state of the food displayed on a package (rather than the state of the food itself) and examine healthiness perceptions. In addition, we examine whether making the ingredients in the food salient will attenuate the blender effect. That is, we vary both the physical state of the food displayed on the package as well as the ingredient salience. We have participants view a carton of apple juice displaying either an image of apples or an image of a glass of juice. In the ingredient salient conditions, participants are reminded that the apple juice contained 100% juice. No such reminder was given in the ingredient not salient conditions. The results showed that when the ingredients were not made salient, individuals perceived the apple juice as healthier when the carton displayed an image of the food in a raw (vs. processed) physical state. However, when the ingredients in the apple juice were made salient there was no difference in healthiness perceptions based on the physical state of the food displayed on the package.

In Study 3 we examine the influence of the blender effect on consumption volume. We predict that because individuals perceive foods in less processed physical states as healthier, they should consume a greater volume of the food when the ingredients are displayed in a less (vs. more) processed physical state. Additionally, we examine whether priming individuals to mindfully evaluate the healthiness of the food before consumption would attenuate the effects of physical food state on consumption. Study 3 had a 2 (physical food state: raw vs. processed) x 2 (mindful healthiness evaluation: absent vs. present) between subject design. Participants were shown the ingredients in a new juice smoothie either in the raw/unprocessed physical state or in a processed physical state. Then, they were allowed to consume as much of a sample of the juice as they wanted. The results showed that, as predicted, individuals consumed a greater volume of the juice when the ingredients were displayed in the raw (vs. a processed) physical state. However, mindful healthiness evaluations did not moderate this effect.

The results of our studies demonstrate a blender effect whereby individuals perceive foods as healthier when the foods are displayed in a raw or less processed physical state (vs. a more processed) physical state. This blender effect is driven by perceived category representativeness with foods in their raw state being perceived as more representative of the broader evaluative category (healthy or unhealthy), and is attenuated when the ingredients are made salient.

The findings of our studies have implications for theory and practice. From a theoretical standpoint this is possibly the first research to examine the effects of physical food state on consumers’ healthiness perceptions as well as the first to show that the physical state of the food depicted on a package can influence consumers’ healthiness perceptions. From a practical standpoint, our findings suggest that managers should take care when deciding the physical state of the food they display on packages, menus etc. as it can have unintended consequences in terms of influencing consumer perceptions.

REFERENCES