Stack It Up Or Spread It Out? the Effects of Vertical Versus Horizontal Plating on Calorie Estimates and Consumption Decisions

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We investigate how visual presentation of food on a plate influences consumers’ portion size perceptions and serving size choices. Four studies show that presenting food vertically (i.e., stacking the food) versus horizontally (i.e., spreading the food across the plate) leads to larger portion size perceptions and larger serving size choices.

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EXTENDED ABSTRACT

The way that food is presented on a plate not only influences aesthetic evaluations related to the way the food looks, it can also influence taste evaluations (Michel et al. 2014), preferences (Zampollo et al. 2012) and even the amount consumers are willing to pay for the dish (Michel et al. 2014). In light of the effects that food presentation can have on consumers’ judgments and decisions, companies invest a significant amount of time and resources in perfecting the presentation of food items on plates that will be displayed on packages, menus, restaurant patron’s tables and in display cases (Deroy et al. 2014; Spence et al. 2014). Some companies even use plating as a strategic tool. For instance, Red Lobster recently changed the way many of their menu items are plated with a focus on vertical food presentation. This research investigates an unintended consequence of food plating in terms of influencing consumers’ portion size perceptions and serving size choices. We ask: would presenting a portion of food vertically (i.e., stacked up on a plate) versus horizontally (i.e., spread out on the plate) influence consumers’ portion size perceptions? And, how might vertical (vs. horizontal) plating influence consumers’ serving size choices?

We draw on prior research related to size perceptions which shows that when evaluating the size of a container or product, consumers typically base their judgment on the size of one or two salient dimensions without accurately adjusting for the remaining dimensions (Krider et al. 2001; Krishna 2006; Raghubir and Krishna 1999), and link it with work which demonstrates in typical consumption situations consumers have a downward viewing angle. Building on these ideas, we propose that when looking down at a plate of food the length and width of the food portion will be relatively more salient than the height dimension leading consumers to perceive portions of food that are presented horizontally (vs. vertically) as larger.

Given that we propose that portions of food will be perceived as larger when they are presented horizontally (vs. vertically) on a plate, an important follow up question becomes: how will food presentation influence consumers’ serving size choices? We argue that when choosing between different sizes of free snacks individuals will choose larger sizes when the items are presented horizontally (vs. vertically) since the difference in portion size would be more apparent. However, if actual serving size information is available there should be no difference in portion size choice based on product presentation.

Across four experimental studies we examine the effect of vertical (vs. horizontal) plating on consumers’ portion size perceptions and serving size choices. In Study 1A we have participants view equal size portions of mashed potatoes that are either presented vertically or horizontally. We find that consumers perceive the portion of food as larger when it is presented horizontally on the plate. In Study 1B we rule out a potential alternative explanation for the effects of food presentation of portion size perceptions in terms of perceptual contrast between the food and the edge of the plate. Specifically, prior research shows that the distance between the edge of the plate and the food can lead to perceptual biases whereby greater distance leads food portions to be perceived as smaller (Van Ittersum and Wansink 2012). In Study 1B we vary the presentation of the food (horizontal vs. vertical) as well as the size of the plate the food is presented on and show that perceptual contrasts between the plate and the food are not driving our results.

Then, in Study 2 we provide direct evidence for our proposed process related to the length and width being relatively more salient than the height when viewing a plate of food from a top view. Specifically, we show that the effect of food presentation on portion size perceptions holds when individuals view the food from the top view but is attenuated when individuals view the food from a side view (i.e., straight on).

Finally, in Study 3 we examine a downstream effect of food presentation in terms of serving size choices. Additionally, we examine a boundary condition to the effect of food presentation in terms of displaying actual serving size information (i.e., product weight). That is, Study 3 varies both food presentation and the presence of serving size information. The results show that in the absence of serving size information, consumers choose larger portions of free snacks when the snacks are presented horizontally (vs. vertically). However, when serving size information is present there is no difference in serving size choices based on product information.

Collectively, the results of four studies show that food presentation can systematically influence consumers’ portion size perceptions and serving size choices. This effect appears to be driven by consumers’ tendency to base portion size evaluations on the length and width dimensions of the food since these dimensions would be relatively more salient than the height dimension when looking down at a plate of food on a table. These findings are important from both a practical perspective as well as from a conceptual perspective. From a practical perspective, marketers and restaurant managers have considerable flexibility in manipulating the way food is presented on a plate. Therefore, managers might be able to strategically present food vertically or horizontally to influence consumers’ portion size perceptions and choices. From a conceptual perspective, prior research related to size perceptions shows that the height dimension of containers and packages tends to dominate size evaluations (Krisha 2006; Raghubir and Krishna 1999). However, our findings suggest that when evaluating the size of portions of food displayed on a plate the length and width dimension might have a greater influence on size perceptions.

REFERENCES


Piqueras-Fiszman, Betina, Jorge Alcaide, Elena Roura and Charles Spence (2012), “Is it the Plate or is it the Food? The Influence of Color and Shape of the Plate on the Perception of the Food Placed on it,” *Food Quality and Preference, 24*, 205-208.


