Why It's So Hard to Reverse Food Supersizing

By **Pierre Chandon** , INSEAD Professor of Marketing

Understanding size perceptions can help make consumers more receptive to both downsizing and supersizing.

As food portions and packages have grown, so has the weight of many consumers. To reverse this trend, and preserve their margins when costs go up, some food makers have tried downsizing their product sizes.

But whenever a brand tries to shave a few percentages points off the size of their product, consumers immediately notice and complain. The latest **revolt** occurred late last year when Mondelez reduced the size of its Toblerone chocolate bars in the United Kingdom by increasing the gap between its triangular chunks. When brands have chosen to decrease sizes rather than increase prices, they often make **headlines news**. Former New York Mayor Bloomberg's attempts to cap soft drink cups at 16 ounces (44 cl) level even made the **cover** of the regulation-friendly New Yorker magazine.

Why do people get so mad at downsizing? Certainly, downsizing is a loss, but so is a price increase. And consumers are generally indifferent to all the supersizing that has been happening over the past three decades. The same 16 ounces which now seem so normal were, not so long ago, **advertised as a "Big size, serving 3"**. In fact, for its **first 50 years**, the standard Coca Cola bottle was 6.5 fluid ounces. Now single servings of Coke at American fast food restaurants regularly reach up to 32 ounces.

As I have demonstrated previously, including in this **INSEAD Knowledge interview**, one of the factors that has contributed to the surge in portion sizes has been our inability to correctly tell how much sizes have actually increased. When an object is doubled in size, it only looks 50 to 70 percent larger. In an **earlier study** with **Nailya Ordabayeva**, a former INSEAD PhD student and now an Assistant Professor of Marketing at Boston College, we showed that this happens because our brain is bad at geometry. It visually adds instead of multiplying the changes in height, width, and length.

When it comes to downsizing however, our new results show that judgments of size are amazingly accurate, hence the negative reaction when companies try to downsize their products. This was the conclusion of our latest **research**, published in the February issue of the prestigious *Journal of Experimental Psychology: General*, based on 4,842 judgments made by regular shoppers or by experts such as the cooks and servers at the **Institut Paul Bocuse** outside Lyon in France.

The accuracy of less

So, how good are people at estimating decreasing rather than increasing portions? In one of our experiments, we asked 510 people to take a look at five different portions of chocolate candies in plastic cups. Do you think that you can do better than most?

The cups had 37, 74, 148, 296, and 592 candies respectively. In the "supersizing" condition, participants were told the count of the smallest portion (37) and were then asked to estimate the number of chocolate candies in the other four portions. The average estimates were 57, 102, 184, and 296. In other words, people missed exactly half the candies in the largest cup!

People in the "downsizing" group were told the count of the largest portion (592) and were asked to estimate the number of candies in the other cups. Their average estimate was 346, 163, 74, and 36. They only misjudged the number of candies in the smallest cup by one candy!

We replicated this "accuracy of less" in all the studies. On average, we found that a portion that is doubled in size is judged to be only 72 percent larger than the original size, whereas one that is halved appears to be 53 percent of the original size. This means that doubling a 16-ounce cup creates a 32-ounce cup that would be judged to hold 27½ ounces (a strong underestimation), whereas halving a 32-ounce cup creates a 16-ounce cup that would be judged to hold 17 ounces (a very good approximation).

The role of estimation bounds

We spent a lot of time examining why judgments are so much more accurate when quantities decrease compared to when they increase. We ruled out many explanations, including that it happens because people spontaneously view increases as gains and decreases as losses. For example, we found the same pattern of results even for food so unpleasant that no-one would view a supersized portion of as a gain!

In the end, we found that this asymmetry exists because there is a natural lower bound or a zero point when portion sizes decrease. In other words, a decreasing portion cannot go below zero. When portions increase, however, they can theoretically grow to infinity. Without an upper bound, it is hard for people to estimate how big something has become.

To test our hypothesis, we provided an upper bound to some of the participants, telling them that the plastic container could hold a maximum of 629 chocolate candies. In this case, participants in the supersizing condition judged the largest container to hold 528 M&Ms, much closer to the actual numbers. When an upper bound was available, judgments of size increases

were no longer less accurate than judgments of size decreases.

As another test, we asked people to estimate the change in size between portions rather than the size of the portions themselves. We did this because size ratios – for example, how many times larger or how many times smaller one portion is compared to another – do not have an upper bound, regardless of whether sizes increases or decreases. We found that estimating size ratios reduced the asymmetry between increases and decreases, and made consumers less averse to size decreases.

Helping customers to downsize or pay for supersizing

I have shown in **previous research** that getting consumers to focus on the pleasure of eating can make consumers happier to pay more for smaller food portions. This study is another solution both food marketers and policy makers can consider for helping customers choose healthier options without reducing profits.

Highlighting estimation bounds, for example, by informing people about the total amount of product that a container can hold, automatically improves estimations of size increases, which helps people realize how large some of today's supersized portions have become. This increased accuracy helps consumers make better decisions when faced with supersized portions and packages, such as choosing a more reasonable portion size. Other consumers will continue to prefer the larger size, but will be willing to pay more for it.

On the other hand, prompting people to think of how many times smaller a downsized package is compared to the original reduces their sensitivity to size decreases. This, in effect, makes people less averse to, and more receptive towards, healthier downsized portions and packages.

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