

MODERN

HOW
CHOICE
ARCHITECTURE
IS SHAPING
OUR FOOD
CHOICES



Anyone who has ever gone to a Mexican restaurant where waiters give you a basket of fresh tortilla chips and a bowl of salsa while you wait for your food can understand the power of environment and our brain's automatic system on our choices. Despite the fact that you were excited to eat the enchilada you ordered, you were hungry and talking and suddenly you have overdosed on chips. You have been making this mistake since you were a kid with your parents warning "Don't fill up on bread!" Despite your rationality and self-control, some mindless reaction took over, combined with the fact that everyone else was eating the chips, and now you are full before dinner has even arrived. Situations like this, and dozens of others that people encounter on a daily basis, illustrate the way that choice architecture can shape

Image from USDA.

ARCHITECTURE

BY EMILY HOWELL

our decisions. Choice architecture is the structured “context in which people make decisions,” or the way the design and layout of options and information shape human behavior (1). Take the visit to the Mexican restaurant as an example – small details such as the layout of the menu, the availability of free chips, and the size of the dishes all can affect the food the customer chooses and the amount of food he or she eats. The term “choice architecture” was first defined by behavioral economist Richard Thaler and legal scholar Cass Sunstein in their book *Nudge*, in which they outlined how choices can be designed to help people make better decisions to improve their well-being. Thaler and Sunstein explain that the use of choice architecture to “nudge” people with environmental cues is part of their political theory of “libertarian paternalism.” People’s choices are guided through choice architecture, but people still have the freedom to choose to ignore that guidance, and the applications are wide-ranging: from the design of retirement plans to cell phone settings and dining hall layouts (1,2).

At a time when obesity rates continue to increase in the United States despite news stories and education campaigns urging

individuals eat better and exercise more, the idea of choice architecture offers some exciting public health possibilities. Policy makers and public health officials are becoming more concerned with the environmental factors contributing to American’s growing weight. Issues such as the lack of sidewalks or bike lanes in residential issues, the accessibility of soft drinks in schools, or “food deserts” in cities are being seen as pathways through which the poor health habits of citizens can be addressed, and greater study is going into the ways in which the structure of our surroundings affects our choices as individuals. Following this line of thought, choice architecture has emerged as a potentially powerful tool for addressing Americans’ problematic diets.

The discussion of obesity often becomes tied up with views of individual responsibility and willpower. As the argument goes, if people know what food is unhealthy and continue to eat that food they are responsible for their actions and health. This contention is behind the view of humans as “homo economicus,” or beings ruled by rationality and self-interest, making the decisions that provide the greatest benefits to them. Choice architecture, howev-

er, builds off studies in behavioral economics and social psychology that explain why human behavior so often fails to follow this model (1,2). The description of the brain’s functions that many psychologists and neuroscientists use today categorizes thinking into two types: Reflective and Automatic. The Reflective System is the system associated with controlled, “reflective, goal-oriented” thinking, the sort of thinking that we typically mean when we say we “are thinking” (1,2). By contrast, the Automatic System is the thoughts that require “little or no cognitive engagement,” or the reactions triggered by environmental cues and immediate feelings – the sort of thinking we would call instinctive (1,2).

As a result of our dual-system thought process, our reflective thoughts are constantly shaped or biased by our automatic thoughts in ways we often may not realize. Rules of thumb, for example, or principles we hold that have broad application but aren’t necessarily accurate for specific situations, are helpful and often necessary for making quick decisions in life, but they can lead to systematic biases because of how automatic and reflective thoughts function as we try to reason in situations with limited information. We start

with what we know and use assumptions based on previous knowledge to reason our way to an answer that feels right, a process that relies heavily on our automatic thoughts to guide our reasoning. People are also optimistic to a fault, especially when estimating personal immunity from harm. Our aversion to loss gives us a strong desire to stick with what we know, regardless of whether that may be doing us more harm than good, and we tend to stick with the status quo leading to what is called the “status quo bias.” We are also incredibly susceptible to how the framing of a question can determine the answer we choose. As Thaler and Sunstein explain, the “Reflective System does not do the work that would be required to check and see whether reframing the questions would produce a different answer”(1). Consequently, busy people make thousands of choices daily without relying on the Reflective System alone. Even if they could, the immense number of factors to consider from personal rules of thumb to loss aversion and status quo bias – would freeze our action while we tried different permutations to come to a rational decision.

Additionally, even when we do know how we should act, studies suggest self-control is a more complex mental process than one might think. Research in neuroeconomics has found that self-control also can be understood as the result of a two-system process with each person containing a “Planner” and a “Doer.” The Planner works towards long-term welfare, but the Doer reacts to instant temptations, which can be will-bendingly strong (1). When a temptation occurs we try to assess the situation to determine how to react to the temptation, which

requires the thought process molded by the Automatic and Reflective thoughts and subject to all the biases listed above. In short, each decision is a mess of interactions between long-term goals, short-term temptations, reasoning based on limited knowledge, and instant reactions and biases.

Taking these complex thought processes into account, people can implement choice architecture to guide the decision-making process and, ideally, help the individual make the decision in their best interests. This can be done by:

1. Creating the path of least resistance through helpful default settings. Even if the individual should forget or not know how to act the default will give them the option that is probably in line with their long-term goals and reflective thoughts. For example, if the default free appetizer at the Mexican restaurant was a small plate of fruit unless the customer requested a basket of chips.
2. Anticipating individuals’ errors, such as how Gmail will notice if you have typed the word “attached” in your email but forgotten to attach the document.
3. Giving feedback that helps guide decisions as well as incentives for making certain choices.
4. Structuring complex choices, keeping in mind the power of framing in shaping the answer to a question or the outcome of a choice (3).

In public health, health research, and public policy, choice architecture is

increasingly being studied and implemented to help people make healthier choices in a simple, low-cost, and legislation-free way without reducing the options for individuals. A study done in Jerusalem found that the position of food choices on a menu influences the meals people chose. The researchers tested first in a hypothetical situation, with 240 Hebrew University students selecting dishes from four different menu versions. Each student chose one item from each of four categories on one menu – appetizer, entrée, drink, and dessert – and each category had a different number of options. The researchers found that regardless of the popularity of an individual item overall, it was chosen more often when it was placed at the beginning or end of its category. The researchers then conducted a similar test in a real café in which customers were given one of two different menus and meals chosen were recorded with respect to where the option was placed on the menu the customer used. In both the hypothetical and the real situation studies, the researchers found that the menu items at the beginning or end of the category increased in popularity by 20 percent regardless of the size or kind of food in the category (4). Although the researchers do not yet have an explanation for these results, the information can be implemented to guide people to healthier food options. One organization in Worcester, Massachusetts has begun doing just that. WooFood, a nonprofit started by three medical students at the University of Massachusetts in Worcester in 2010, offers certification in “Culinary Choice Architecture,” which they describe “brings restaurants through a rigorous but business-friendly process to make

the healthful choice the easy choice” (5).

Another study conducted in a larger hospital dining hall assessed whether using choice architecture to restructure the layout and labeling of food and beverage options could increase the sales of healthy options. A joint study by the Harvard Business School and Harvard School of Public Health implemented two phases of changes in a large hospital cafeteria. For the first three months options were labeled red, yellow, or green indicating whether the food or drink was unhealthy, neutral, or healthy, respectively. In the following three months the colored labels were kept and the cafeteria layout was redesigned to increase the visibility and convenience of some of the green items. In the first phase, the sale of unhealthy beverages decreased 16.5 percent, and then another 11.4 percent with the redesigning of the cafeteria. The sale of healthy beverages, conversely, increased 9.6 percent then an additional four percent after the redesign (6). Further studies are currently underway, many through the Behavior and Health Research Unit at the University of Cambridge Institute of Public Health. One research project is looking at “altering choice architecture to change population behavior to improve outcomes” and another addresses the “acceptability to the public of intervention to change behavior” (7).

The latter study brings up an important concern with the efficacy of choice architecture. According to the researchers’ synopsis, it will address how the acceptability of public health interventions varies between the policymakers and the public, as well as how successful the intervention are, partially as a result of public acceptance (7). As other researchers have high-

lighted, only a few choice architecture public health interventions have been evaluated for effectiveness in changing behavior, or for their ability to achieve and sustain long-term behavior change, which is what is needed to improve and maintain health (2). This is in part due to the small number of studies so far, and to the fact that the conducted studies have not yet been evaluated over a long time period. The idea of influencing people’s choices in ways that may not be aware of can make people uncomfortable. In response, Thaler and Sunstein argue that people are always influenced by the design of choices, whether or not intentionally. Design is never neutral (1). Additionally, they argue, choice architecture does not limit people’s freedom to choose, unlike a public ban on soft drinks, for instance (1). Should they desire, people can always ignore the green labels or make the trek to the inconveniently placed cookies. Ignass Devisch, a professor of ethics, philosophy and medical philosophy at Ghent University in Belgium, argues that, if used properly, implementing choice architecture instead of legislation and regulation can preserve an individual’s freedom to choose while also organizing our environment in a way that makes healthy behavior more likely (8).

On the other hand, some public health experts fear that choice architecture could have unintended consequences on health and weight-gain. Labeling food as healthy could make people ignore the calories, as they may assume healthy is a justification for larger portions (2). Focusing on choice architecture could also divert attention from stricter public health measures that could be more effective. For example, pricing interventions and the regulation of food labeling and marketing to

children have been shown to be likely to create the largest health gains in the shortest amount of time. Additionally, choice architecture may not create diet changes on the scale needed to truly have an impact on obesity rates (2). Viewing choice architecture as a replacement to public health regulations could slow or hurt the overall goal of combating obesity and poor nutrition.

Nevertheless, given the results that choice architecture has already shown in menu compositions and dining hall restructurings, it is likely that it will increasingly be used in public health interventions to address the issue of individual food choices and obesity. Certainly, though, its efficacy in relation to public acceptance and supplementing or replacing public health regulations does need to be studied further if it is to be the powerful health tool many researchers believe it could be.

Emily Howell ‘13 is a History and Science concentrator in Leverett House.

References:

1. R.H. Thaler and C.R. Sunstein. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. (Yale University Press, New Haven, 2008).
2. T.M. Marteau, D. Ogilvie, M. Roland, M. Suhrcke, M.P. Kelly, Judging nudging: can nudging improve population health? *British Medical Journal* 342, 228 (Jan 25, 2011).
3. R.H. Thaler, C.R. Sunstein, J.P. Balz, *Choice Architecture*. (University of Pennsylvania, 2010).
4. E. Dayan, M. Bar-Hillel, Nudge to nobesity: Menu positions influence food choice. *Judgment and Decision Making*, 6, 4 (Jun, 2011).
5. WooFood website. (WooFood, 2012).
6. A.N. Thorndike, L. Sonnenberg, J. Riis, S. Barraclough, and D.E. Levy, “A 2-phase labeling and choice architecture intervention to improve healthy food and beverage choices.” *American Journal of Public Health*, 102, 3 (Mar, 2012).
7. Behavior and Health Research Unit website. (BHRU, University of Cambridge, Institute of Public Health, 2012).
8. I. Devisch, Progress in medicine: autonomy, oughtonomy and nudging. *Journal of Evaluation in Clinical Practice*, 17, 5 (Jul 28, 2011).