When *Nudging* in the Lunch Line Might Be a Good Thing

Lisa Mancino
lmancino@ers.usda.gov

Joanne Guthrie
jguthrie@ers.usda.gov

- With millions of children served each schoolday, USDA-sponsored school meals provide an important opportunity to improve diet and health.
- Schools can exert considerable control over the food choices they offer and the manner in which they are presented—the "choice architecture" in behavioral economic terms.
- Behavioral economic theory suggests several possibilities to structure school cafeteria environments in a noncoercive manner to encourage healthy choices.

Yellow Dog Productions

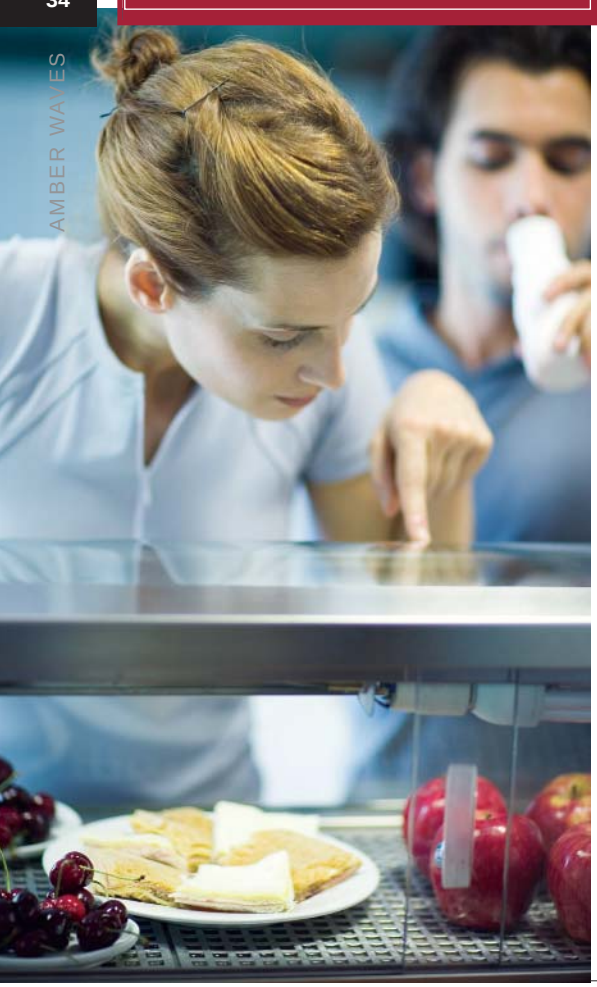
Ever planned to have fruit at lunch, but in the cafeteria line, selected a brownie instead? That spur-of-the-moment decision is proof that consumer behaviors predicted by traditional, neoclassical economic models do not always occur. Experimental psychology and behavioral economic studies show that simple rules of thumb and certain cues, like presentation and visual appeal, can influence on-the-spot decisionmaking. For example, a diner going through the cafeteria line is more likely to choose the "default" side of fries with a hamburger, rather than another (and perhaps healthier) option. Though more expedient than calculating the expected payoff from each and every decision, these cues and rules of thumb can lead to systematic reasoning errors when people make food choices.

When distracted or under stress, people also are more likely to make poorer food choices. Certain decisionmaking environments, such as social situations, can also increase the likelihood of choosing options or engaging in behaviors, like overeating or overspending, that are not in sync with future goals, such as losing weight or saving money.

Behavioral economists Richard Thaler and Cass Sunstein argue that understanding how presenting choices may influence decisions—termed "choice architecture"—can reveal potential options to increase the link between intentions and behaviors. Choice architecture relies heavily on subtle cues, or "nudges," to encourage people to follow through on their intentions.

Findings from behavioral economic research are typically applied to adult decisionmaking. But children most likely have limits on their patience, foresight, and analytic skills, too, so choice architecture may also help them. In particular, applying choice-architecture research findings to school foodservice could help encourage more healthy behavior in children and teens. School cafeteria managers may be able to control many of the elements shown to influence food choice, such as how foods are presented. Identifying how these elements could be used to cue healthier choices may help improve students' diets without sacrificing freedom of choice.

Displaying healthy items more prominently can boost their selection.



JupiterImages

School Cafeterias, a Promising Venue for Choice Architecture

Thirty million children and adolescents eat a USDA-sponsored school lunch and almost 10 million eat a USDA-sponsored breakfast every schoolday, making school meals a particularly important opportunity to improve the diets and health of U.S. schoolchildren. With rising rates of child obesity, child health advocates are eager to see America's schools make more use of this opportunity.

USDA's Food and Nutrition Service, which regulates the school meal programs, has urged school foodservices to make meals healthier by offering more whole grains, fruit, and vegetables; encouraging consumption of low-fat milk; and reducing the amounts of sodium, saturated fat, and transfat in meals. Since passage of the Child Nutrition Reauthorization Act of 2004, schools that participate in USDA school meal programs have been required to develop wellness policies covering foods available in school, nutrition education, and physical activity.

Despite pressure to improve meals, most schools continue to sell less nutritious foods and beverages in addition to USDA meals. The School Nutrition Dietary Assessment Study-III (SNDA-III) collected nationally representative data on school food offerings and student dietary intakes in spring 2005. Results showed that, in addition to providing USDA meals, most middle and high schools sold low-nutrient, high-calorie foods and beverages either through vending machines or as à la carte cafeteria items. Some school administrators justify the presence of these "competitive foods" on the grounds that they meet student preferences, offer choice, and help to balance tight foodservice budgets in a period of escalating food costs.

Many child-health advocates want to ban less nutritious competitive foods, citing that children may lack the maturity to consider the long-term consequences of their choices when faced with the immediate appeal of sugary or high-fat foods. However, some schools and parents oppose such bans, either for school budgetary reasons or because they believe students are entitled to have food choices and, in the larger world, will eventually have to learn to make such choices on their own. In particular, choice may be more important to older students, and data show that the variety of competitive foods available expands in secondary schools. For example, snack chips are available à la carte in more than half of secondary schools but in only a quarter of elementary schools. This wider range of choices is associated with declining diet quality. Only about a quarter of high school students eat fruit with their lunch, compared with one-half of elementary school students.

With skillful application of choice architecture, however, students' freedom of choice can be preserved while they are steered toward selections more in their long-term interest. Since the arrangement of the school food environment may influence students' choices, it is important to consider the consequences, unintended or not, of design and layout. Given that school cafeteria managers have considerable influence over the types of foods and the manner in which they are presented, this strategy may be a highly effective way to improve students' food choices.

How Might School Cafeterias Currently Influence Choice?

Thaler and Sunstein point out that nearly ubiquitous subtle decision cues can intentionally or unintentionally influence consumer choices. For example, marketing research finds that items displayed more prominently, at eye level, or first in line tend to be chosen more often than other items. This tendency suggests that a carefully planned arrangement of food in cafeterias could influence students' choices, and ultimately, their diet quality.

Other behavioral studies have found that specific situations and behavioral cues may further bias behavior toward short-term goals. Simply seeing a brownie or other high-calorie food, for example, can lead to unplanned consumption. Certain situational factors, such as feeling hungry, stressed, or distracted also are associated with more impulsive behavior. It is possible that noise levels, crowding, and long cafeteria lines may work against rational decisionmaking about food choices.

Analysis of the SNDA-III data shows that 40 percent of school principals and over 50 percent of students regard cafeteria noise as a problem. Nearly 48 percent of students also said that lack of seating was an issue, and more than 80 percent cited long lunch lines. On average, students spent close to 5 minutes of the 30-minute lunch period waiting in line. Positive decision cues, such as smartly packaged healthy "grab and go" options, may help time-pressed, hungry, and distracted students make better food choices.

Verbal prompts can also cue food choices and eating behaviors. Anyone who has ever unexpectedly agreed to choose fries with an entrée, supersize a meal, or order a decadent dessert may have realized the power that suggestion can have on choices. But these prompts can also encourage one to make healthier choices. Yale University researcher Marlene Schwartz found that 70 percent of students in a 2007 study ate a serving of fruit at a meal when school cafeteria workers asked if they would like fruit or fruit juice. Only 40 percent of students ate a serving of fruit when not prompted.

What individuals choose has also been shown to vary with when they make their choices—and when they get their rewards. One of the most widely documented anomalies in behavioral studies is that individuals are more likely to make future sacrifices than immediate ones. People are less willing to limit salt, calories, and fat for better future health if they are considering these sacrifices on the spot rather than for a future meal or snack.

Precommitting to a choice can also help people act on their intentions. Behavioral studies show individuals who made food choices before being confronted with distractions, visceral influences, or the promise of immediate gratification were less likely to exhibit present-biased preferences and more likely to follow through on their dietary objectives. Allowing students (or for younger children, their parents) to select healthy meal options ahead of time also may help reduce purchases of less nutritious foods in the cafeteria.

Choices have even been shown to vary with payment methods, with those paying cash making more deliberative choices than those paying with credit. Prepayment options such as student debit cards or personal identification numbers

Ken Hammond, USDA

Seventy-six percent of public schools use a prepayment system for purchasing school meals and a la carte items.

In the Cornell University experiment, healthy menu items were marked with a green dot.

(PIN) numbers linked to prepaid meal accounts are an increasingly popular way of handling school meal payments. Parents can prepay for meals in a private, designated school lunch account, with students receiving meal cards that are used to debit the account when they go through the cafeteria line. Students receiving free and reduced-price meals also are provided debit meal cards to minimize any appearance of differences in payment between them and students paying full price. Analysis of SNDA-III data indicates meal prepayment systems are used in 76 percent of public schools.

While cash not spent on school meals can be used for other items, prepaid account "dollars" are restricted to school lunch items (at least until the end of the school year when excess money is returned). Because the use of prepaid dollars is limited by both time and choice, behavioral economists hypothesize that these dollars constrain choice and are therefore less valuable to students than cash. Thus, the cue to eat more in the cafeteria may be stronger for students receiving $20 in a prepaid account rather than the same amount in cash. But allowing individuals to only prepay for nutritious foods could serve as a commitment device that would help nudge students to make healthier choices.

Testing the Power of Nudges: Lessons From a Small Study of College Students

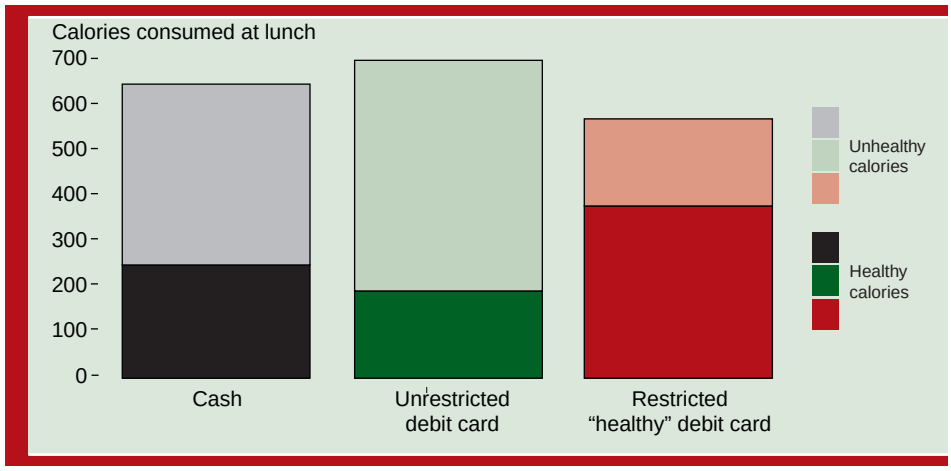
Research conducted at Cornell University helps shed light on some possible effects of adjusting the choice architecture within cafeterias. The first experiment found that payment options do indeed significantly affect food choices. Using approximately 200 college students from Cornell University, researchers randomly assigned participants to one of three payment options: unrestricted prepaid cards that could be used for any menu item, restricted cards that could only be used for more healthful items, and cash.

Participants received a total of $20 either all in cash or $10 in cash and a $10 restricted or unrestricted prepayment

How students paid influenced what foods they chose

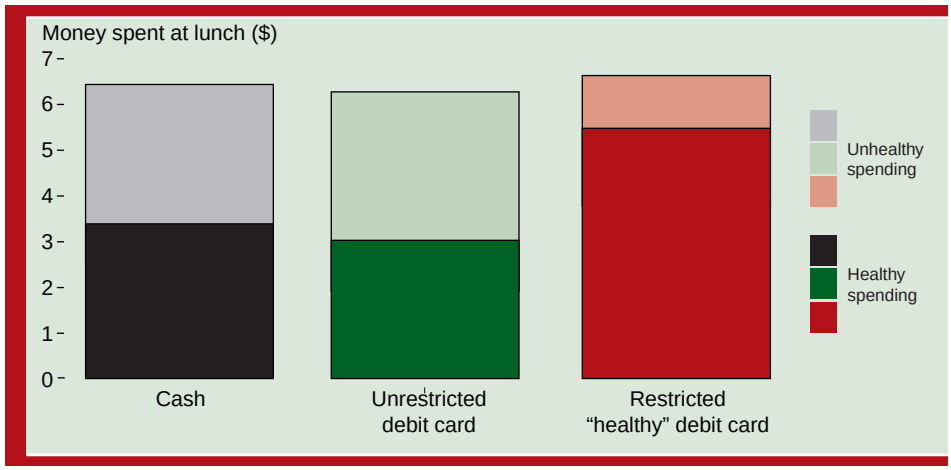
Source: USDA, Economic Research Service.

Restricted card users ate fewer total calories, and more calories from healthy foods



Source: USDA, Economic Research Service.

Restricted card users spent more on healthy foods



Source: USDA, Economic Research Service.

card. Cash was provided to prepaid card recipients so that they were not completely restricted in their lunch purchases. For example, a participant with a restricted "healthy" card could have spent the $10 in cash to purchase any combination of entrée, side dish, dessert, and drink. Participants were told that all cash not spent or money left on their card would be returned to them.

Green stickers designated restricted cards. The same stickers were used to identify the healthy food choices on the menu and in front of the items offered in the cafeteria line. Participants were informed that the debit card could only be used for these items, and that they could use cash for other menu items.

The researchers found the frequency with which certain foods were ordered differed significantly by payment type. Students using the unrestricted debit card were about 25 percent more likely to purchase a brownie, 27 percent more likely to buy soda, and 7 percent less likely to buy skim milk than those using cash. Individuals using the unrestricted card were more likely to buy less healthful (though similarly priced) side items and desserts than those using cash. These participants also tended to substitute soft drinks for skim milk. Purchases by students using the restricted debit card were markedly different than those by students using either the cash or the unrestricted cards. In nearly every case, students were more likely to order healthy items when purchase options were restricted.

The form of payment also led to significant differences in diet quality. Those using the unrestricted debit card ate significantly more calories than either the cash or restricted groups, with restricted-debit card users consuming the fewest calories. The calories derived from healthful foods varied as well. Those using the unrestricted card consumed the most calories at lunch but had the fewest calories from nutritious foods. By comparison, students using the restricted debit card consumed the fewest total calories but the most calories from nutritious foods. Compared with the students who used the unrestricted card, those using the restricted debit card also ate significantly less added sugar, total fat, saturated fat, and caffeine.

The researchers also found that total spending varied by payment method. Surprisingly, individuals using cash spent more on average than those with an unrestricted prepaid card. Students using the restricted card spent the least on less nutritious items, while those using the unrestricted card spent the most on these foods.

To test the potential efficacy of pre-ordering, these same researchers asked participants in a pre-selected group to make their food choice off a menu board and fill out an order card prior to entering the cafeteria. A researcher accompanied the participant to the food line and gave the order card to the food preparation staff. Another group of participants made up the control group, whose members


Cornell University

Pre-ordering of food selections by Cornell students did not always result in healthier choices.

filled out the same card in line while viewing all the menu options and handed their order directly to the foodservice staff.

The results showed that the effect of ordering in line while viewing the food was varied and may have had more to do with the visual appeal of the food than its health content. While the control group members were more likely to choose brownies than the pre-selection group members were, control group members also were more likely to choose a salad and turkey sandwiches. They were less likely to choose french fries, chicken sandwiches, and caffeinated beverages.

Can Nudging Promote Health While Preserving Choice?

The research presented here indicates that knowledge of how to successfully apply behavioral economic theory to school cafeteria settings is still in its "kindergarten stage." Results from the Cornell experiment were mixed. While allowing prepayment only for healthier foods seems a promising approach, it is not known how well it will work with school-age children in a real-world cafeteria environment. Preordering, at least as carried out in the Cornell experiment, did not reliably encourage healthier choices. It may be that other preordering approaches could be more effective—or preordering may simply not work as behavioral economic theory predicts.

Clearly, more piloting in real-world cafeteria situations with school-age children is needed before behavioral economics can graduate to being a source of recommended practices. However, these strategies offer a new set of potential options for improving choices within school cafeterias.

This article is drawn from . . .

Behavioral Economic Concepts To Encourage Healthy Eating in School Cafeterias: Experiments and Lessons From College Students, by David R. Just, Brian Wansink, Lisa Mancino, and Joanne Guthrie, ERR-68, USDA, Economic Research Service, December 2008, available at: www.ers.usda.gov/publications/err68/

Is Dietary Knowledge Enough? Hunger, Stress, and Other Roadblocks to Healthy Eating, by Lisa Mancino and Jean Kinsey, ERR-62, USDA, Economic Research Service, August 2008, available at: www.ers.usda.gov/publications/err62/

Could Behavioral Economics Help Improve Diet Quality for Nutrition Assistance Program Participants? by David R. Just, Lisa Mancino, and Brian Wansink, ERR-43, USDA, Economic Research Service, June 2007, available at: www.ers.usda.gov/publications/err43/

You may also be interested in . . .

Nudge: Improving Decisions About Health, Wealth, and Happiness, by Richard H. Thaler and Cass R. Sunstein, Yale University Press, 2008.

"Balancing Nutrition, Participation, and Cost in the National School Lunch Program," by Constance Newman, Katherine Ralston, and Annette Clauson, in *Amber Waves*, Vol. 6, No. 4, USDA, Economic Research Service, September 2008, available at: www.ers.usda.gov/amberwaves/september08/features/balancingnslp.htm