

How a Nudge Can Make a Habit: The Subversive Nonchalance of Small Changes

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In 2008, New York City passed a law requiring chain restaurants and other food service establishments to post calorie information prominently on their menus. People tend to underestimate the calories they consume, especially when eating out; the thinking behind the law was that displaying those calories would help diners make healthier choices. Surveys suggested broad support for the measure (e.g., Bleich & Pollack, 2010), which was soon adopted by other cities and states and, ultimately, written into federal law.

Law professor Cass R. Sunstein and economist Richard H. Thaler hailed the move in 2009 when they revised their 2008 best seller, *Nudge: Improving Decisions About Health, Wealth, and Happiness*. “We prefer mandating information to mandating food ingredients,” the authors noted approvingly. Cass and Sunstein’s original concept of “nudges” had borrowed from findings in behavioral psychology, which

showed that rational decision-making is often undermined by contextual factors and heuristics, or mental shortcuts. A nudge is any policy tool that capitalizes on these tendencies to influence behavior by reframing decision contexts—without forbidding or penalizing any options.

Habit Formation and COVID-19

In the context of the COVID-19 pandemic, behavior change strategies have come under the spotlight. Health behaviors such as masking, quarantining, and social distancing still feel new to most people. And even relatively commonplace behaviors, such as handwashing or staying home when one feels ill, have become more stringent.

Guidelines on COVID-19 prevention have been widely promoted by governments and health organizations. Unfortunately, knowledge of those guidelines and intentions to follow them won't guarantee people's compliance, warned APS Fellow Allison Harvey and colleagues in a 2021 *Current Directions in Psychological Science* article. Behaviors are reliable only when they're habitual, the researchers argued; for that reason, public-health efforts against COVID should leverage the science of habit formation.

A behavior becomes a habit once it's consistently triggered by contextual cues, without deliberation or conscious consideration—such as putting on a mask automatically before leaving home. The process of habit formation depends on repetition, which can be motivated by goals, rewards, or other reinforcements.

The researchers proposed a comprehensive strategy for habit formation in the context of COVID-19:

1. Identify and address incorrect beliefs
2. [Set goals](#)
3. Devise an action plan
4. Establish contextual cues
5. Engage in repetition
6. Aim for automaticity
7. Acknowledge that change is difficult

Many of these steps can be applied at the individual level. But they can also be promoted by governments, businesses, and other institutions. Moreover, Harvey and colleagues' habit-formation strategy, which builds on decision research in a variety of domains, may be effective for any behavioral change.

Amid the pandemic, policymakers, health professionals, and business leaders have disseminated health guidelines, emphasized risks or prosocial benefits, adapted infrastructure to promote social distancing, implemented cash rewards for vaccination, and instituted fines or barriers to employment or socializing for the unvaccinated. Findings from the broader literature on health-behavior nudges may shed light on what, ultimately, will work—and what won't.

Displaying nutritional information alongside diners' options fit the bill. But how did that policy fare in New York? Despite its popularity, findings have been mixed, with some studies showing positive effects on consumption and others no change at all (Li & Chapman, 2013). One study found that Starbucks orders in New York City dropped by 60 calories, on average, after the law's implementation, but the authors acknowledged that overall reductions in daily intake might be smaller (Bollinger et al., 2011). After Philadelphia mandated calorie posting, researchers found no differences in restaurant patrons' meals, either over time or in comparison to meals in Baltimore, a similar city with no such law (Elbel et al., 2013). In fact, many customers didn't even notice the new labels.

In health domains with higher stakes, the same pattern emerges. In one study, for example, posted food-safety guidelines failed to improve most food handlers' use of thermometers or documentation of food temperatures (Štefan?i? & Jevšnik, 2020). In several others, information about cancer screening increased knowledge about cancer far more than actual screening rates (e.g., Abiodun et al., 2014). Likewise, educational handwashing campaigns may improve understanding of hand hygiene without instilling sustained habits (Briceño et al., 2015; Galiani et al., 2012).

These failures of information were recognized long before “nudge” became a health-policy watchword. In 1976, nurse and public health advocate Nancy Milio, now a professor emeritus of health policy and administration at the University of North Carolina at Chapel Hill, complained about common approaches to changing health behaviors. “Almost all patient and consumer health education assumes, explicitly or implicitly, that if people know what is most healthful, they will do it,” she wrote. To disprove this idea, she argued, one could simply look at health professionals themselves—who were no more likely than others to abstain from alcohol, eat balanced diets, or exercise.

The problem of self-control

Changing behavior isn't like flipping a switch; overhauling old habits demands sustained attention, motivation, and self-control. Unfortunately, according to a 2018 [*Psychological Science in the Public Interest*](#) review by APS Fellow Angela Duckworth and colleagues, people tend to overestimate their powers of self-control—which may explain why purely informational interventions attract so much misplaced enthusiasm.

Interventions that prompt “self-monitoring,” or continued observation and assessment of one's own behavior, may help overcome this hurdle, Duckworth and colleagues noted. For example, studies have shown that self-monitoring helps alcoholics to drink less and dieters to lose weight. Setting goals—particularly goals that are specific, at least somewhat challenging, and set publicly or made with a group—can also help to channel people's attention and motivation toward desired behaviors. For people who have less experience with or commitment to a behavior, it may be especially helpful to break big goals into smaller, more easy-to-realize subgoals: Accomplishing each subgoal will feel like a win, resulting in a sense of progress and a rise in the perception of self-efficacy.

Policies from *Nudge*—What Works?

Stoplight labels: In a revised edition of *Nudge*, Richard H. Thaler and Cass R. Sunstein described a promising product for reducing energy consumption: Wattson, a glowing console that turned red as a household's energy use increased. By 2015, its manufacturer, DIY Kyoto, had folded. But several countries have adopted similar red-light schemes in public health efforts. In the United Kingdom, for example, labels use stoplight colors to indicate whether foods are high (red), medium (amber), or low (green) in calories, fat, sugar, and salt. The more red on the label, the less healthy the choice. In a twist on this idea, Chile has mandated black stop-sign warnings on foods high in those contents. Studies have indicated that both strategies successfully discourage unhealthy choices (Song et al., 2020).

- **Defaults:** Defaults are ubiquitous, Thaler and Sunstein argued—and even when they seem neutral, they can skew our choices. As the authors noted, countries with default opt-in policies for organ donation have much higher donation rates than those that don't, even though citizens are equally free to decline.
- **Social nudges:** To highlight the influence of [social norms](#), Thaler and Sunstein described studies led by social psychologist Solomon Asch in the 1950s. In these studies, Asch tasked groups—each composed of one participant and several confederates—with matching lines of the same length. When the confederates made obvious errors, many participants went along with the group. But some research has suggested boundaries to such effects. For example, learning that most people choose to get vaccinated may have little effect on people with preexisting anti-vaccination attitudes (Brewer et al., 2017).

Other cognitive strategies that have been shown to boost [self-control](#) include pre-planning, such as by forming “implementation intentions” (i.e., linking an anticipated contextual cue with a desired behavior), and “temptation bundling,” or allowing oneself an indulgence only if it's paired with a good behavior (e.g., watching a guilty-pleasure TV show only while running on the treadmill).

Our desire to achieve self-control, and our optimism about our ability to do so, may make these cognitive strategies appealing. However, the researchers advised, in some cases, people might benefit more from avoiding unhealthy impulses altogether than from learning how to override them.

Relatedly, a broad body of research has shown that people engage in more healthy behaviors when those behaviors are more convenient—for example, hospital visitors' hand hygiene improves when hand sanitizers are prominently accessible (Birnbach et al., 2012). By the same token, making unhealthy behaviors inconvenient can effectively discourage them.

In 2020, researchers in Thailand tested interventions for reducing fish sauce use—and, in turn, sodium intake—among diners at noodle shops (Kanchanachitra et al., 2020). Normally, noodle shop patrons served themselves fish sauce from large bottles. When fish sauce instead had to be served from a small bowl with a spoon, the sodium in diners' noodle bowls fell by 124.2 mg; in a more extreme version of the intervention, diners had to use a spoon with a hole in the middle that held less than a teaspoon at a time. In that condition, sodium fell by 276.9 mg. Information on sodium intake was provided in both conditions. But diners who were informed about the health effects of sodium overconsumption and could still use the regular bottles saw nonsignificant effects. In other words, information alone didn't affect dietary decisions—convenience did.

Carrots versus sticks

Since 2002, the Japanese government has sought to encourage hepatitis screenings and, in turn, decrease the incidence of liver cancer and other complications—for example, by mandating that workplaces provide screenings for employees age 40 or older. Nevertheless, screening rates in the country have remained low. In one recent study, employers sent a control group typical screening reminders that contained detailed information on the risks of cancer and benefits of screening. Screening rates in this group totaled 21.2%. One treatment group received a similar reminder that was redesigned to be easier to read and more visually attractive; 37.1% of these recipients got screened. Another treatment group was told that their screenings would be provided free of charge. Although the out-of-pocket cost was only 612 yen (less than \$5.50), screening rates in this group reached 86.3% (Fukuyoshi et al., 2021).

Cultural Attitudes and Global Variations

In 2018, Cass R. Sunstein and his colleagues surveyed people in Australia, Brazil, Canada, China, Japan, Russia, South Africa, and South Korea on the acceptability of a variety of nudges—from ads discouraging smoking and overeating to mandated meat-free days at institutional cafeterias.

The researchers had hypothesized that respondents in all the countries would show generally positive attitudes toward nudges. Contrary to their expectations, support was lowest in Japan. For example, nearly two-thirds of Japanese respondents rejected candy-free zones near checkout counters—a policy that found majority support in all the other countries.

Distrust of government might partly explain those results, the authors suggested—except that confidence in government is relatively high in Denmark, where earlier research had revealed relatively anti-nudge attitudes, and corruption scandals had recently tanked government support in pro-nudge South Korea. Alternatively, the authors noted, rejection may simply have signaled lower enthusiasm about the policies' goals.

Other research supports that idea. A separate survey in South Korea showed lower support for nutritional nudges than has been observed in Europe (Kasdan, 2020). Those findings were explained not by beliefs about government but by perceived risks: Obesity is generally not seen as a pressing health issue in South Korea, and meat is thought to be part of a balanced, healthy diet.

Despite some variation, nudges appear to be broadly appreciated, as long as they align with perceived public health needs. Information-based nudges are the most likely to receive support, particularly in the domain of health behavior. Mandatory calorie posting, for example, won approval from 85% of Sunstein and colleagues' Japanese respondents—more than any other health nudge.

As this experiment showed, eliminating costs—even small ones—can have a big impact on behavior. When feasible, monetary incentives may also have powerful effects. And they may work for a broad range of health behaviors, including substance-abuse treatment, smoking cessation, weight loss, safe sex, immunization, and HIV screening (Montoy, 2018).

Other research, however, indicates that monetary *disincentives* may have more impact. Perhaps the

strongest evidence comes from anti-smoking efforts. Although counteradvertising, age limits, and bans may all deter smoking, cigarette price hikes and taxes appear to have the strongest, most consistent effects, particularly during youth (Gruber, 2001) and in pregnancy (Ringel & Evans, 2001).

In a 2010 study reported in [Psychological Science](#), APS Fellow Leonard Epstein and colleagues gave parents a strict hypothetical budget for weekly groceries and asked them to complete five mock shopping tasks for their households. In one task, food costs mirrored prices at local grocery stores, where healthy foods cost almost 4 times more per calorie than less healthy foods. In two other tasks, prices for healthy foods decreased by 25% and 12.5%, respectively; in the remaining two tasks, prices for unhealthy foods were raised by the same amounts. The researchers found that shoppers purchased more healthy food when it was cheaper—but they used their savings to purchase more unhealthy food as well. By contrast, when prices for unhealthy food went up, shoppers' baskets showed corresponding drops in total calories, carbohydrates, and fat.

Other studies, conducted in several countries, have supported that costs can substantially sway people's consumption of unhealthy foods. For this reason, the World Health Organization has recommended that member states tax unhealthy foods, particularly sugar-sweetened beverages (SSBs), to improve residents' nutrition. Latin America is at the forefront of such efforts: Several countries in the region, including Chile, the Dominican Republic, Ecuador, and Mexico, have implemented taxes on SSBs, and initial findings have shown subsequent declines in consumption (Pan American Health Organization, 2020).

Unlike nudges, “sin taxes” are coercive—that is, they impose meaningful constraints on people's behavior—and perhaps for that reason, they are far less popular than other health policies (Le Bodo & De Wals, 2018). Some countries, including South Africa, have rallied public support for such taxes through media campaigns informing constituents about the health effects of targeted products (Murukutla et al., 2020). Other countries and localities have made taxes more palatable by using the revenues to subsidize healthier foods, expand public health programs, or support charities.

Accounting for norms

One of the most important determinants of behavior is norms—ideas about how other people *actually* act, known as descriptive norms, and how people *should* act, or injunctive norms. As APS Fellow Deborah Prentice noted in a 2018 *Social Research* article on norms, “Once an intervention is successful in changing the social norm, the ubiquitous human tendency to conform to the norm will move behavior in a socially desirable direction.”

While that process sounds simple, norms are anything but. According to Prentice, when we decide how to act, we don't simply rely on a repertoire of norms; we construct a norm that applies in the current context: Even a college student who strongly associates parties with heavy drinking might hesitate to crack open a beer if no other partygoers have done so.

Given these insights, one way to influence behavior might be to harness people's preexisting norms. A study in China (Ong et al., 2020) showed that gay men who reported greater tolerance for risk also engaged in more risky sexual behavior, including sex without condoms. Interestingly, despite their

benefits, health screenings may be subjectively perceived as risky, because they raise the possibility of negative results. When asked if they wanted to enter a lottery in which they could win money only if they tested negative for syphilis for 3 months, these risk-loving men were the most willing to participate. In brilliant fashion, this intervention capitalized on the men's preexisting risk preferences.

Many health interventions seek to change behavior by shifting norms. But because norms are vulnerable to contextual cues, Prentice cautioned, it's easy for these shifts to revert.

To design effective interventions for behavior change, said Prentice, researchers and policymakers need to consider what mechanisms might underlie relevant changes in norms: What are the inputs to norm construction in this situation? (Are people responding to convenience? Costs? Social approval? Anticipated pleasure?) Do people have accurate conceptions of other people's behavior? (Are they justifying an unhealthy behavior because they think it's more common than it really is?) Are current norms inhibiting more beneficial behaviors? (Do guidelines or standards demotivate low performers? Are some unhealthy behaviors highly visible, whereas healthier behaviors are harder to observe?) Will changing norms require people to learn new behaviors?

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