

B. F. SKINNER'S NOTORIOUS THEORY of behavior modification was denounced by critics 50 years ago as a fascist, manipulative vehicle for government control. But Skinner's ideas are making an unlikely comeback today, powered by smartphone apps that are transforming us into thinner, richer, all-around-better versions of ourselves. The only thing we have to give up? Free will.

# THE PERFECTED SELF

By DAVID H. FREEDMAN

**M**Y YOUNGER BROTHER DAN gradually put on weight over a decade, reaching 230 pounds two years ago, at the age of 50. Given his 5-foot-6 frame, that put him 45 pounds above the U.S. National Institutes of Health's threshold of obesity. Accompanying this dubious milestone were a diagnosis of type 2 diabetes and multiple indicators of creeping heart disease, all of which left him on a regimen of drugs aimed at lowering his newly significant risks of becoming seriously ill and of dying at an unnecessarily early age.

He'd be in good company: a 2007 study by *The Journal of the American Medical Association* found that each year, 160,000 Americans die early for reasons related to obesity, accounting for more than one in 20 deaths. The costs are not just bodily. Other studies have found that a person 70 or more pounds overweight racks up extra lifetime medical costs of as much as \$30,000, a figure that varies with race and gender.

And we seem to be just warming up: cardiologists who have looked at current childhood obesity rates and other health indicators predict a steep rise in heart disease over the next few decades, while a report from the Organization for Economic Cooperation and Development projected that two-thirds of the populations of some industrialized nations will be obese within 10 years.

Dan had always been a gregarious, confident, life-of-the-party sort of guy, but as his weight went up, he seemed to be winding down. Then, on a family visit to Washington, D.C., early last year, he and I dropped in on the National Gallery of Art, where 10 minutes of walking left him so sore in one leg that I had to find him a wheelchair. That evening, I decided to say the obvious: He was fast heading to incapacity and an early grave. He had a family to think of. He needed to get into some sort of weight-loss program. "Got any suggestions?" he retorted. As it happened, I did.

Today, my brother weighs 165 pounds—what he weighed at age 23—and his doctor has taken him off all his medications.

feel the pressure of oncoming tears: his face was getting that glandular look. "I will listen and obey ... I have prayed and prayed and prayed for the answers that I'm going to give you today ... I'm a guy who is making *crazy business moves right now*. I left the biggest and best cable news network at the pintacle of news in the world!" That's right, folks, the *pintacle*. The pinnacle of the pentacle. It doesn't get any higher than that.

Approaching its first birthday, GBTV—motto: "The truth lives here"—looks just like a cute little baby network. In programming terms, at least, it has so far been spared the wilder outgrowths of the Beck libido. It has a little comedy, a little reality TV, a little programming for the kids. There's "news" and opinion and, inevitably, hours of the maestro himself, on the mic, talking to the camera, rolling and wallowing in airtime like a basking seal. Only Glenn Beck can do what Glenn Beck does. In all that "raucous stream of misinformation" (to borrow a phrase from Evelyn Waugh), he stands and weeps alone. He may lack the kingpin malevolence of Rush Limbaugh, or the triumphant mendacity of Sean Hannity, but only Beck, discoursing in his heady, open-pored way, can really take you there, to that ideological alpha state wherein squinting mistrust combines with a quite extraordinary credulousness. Look, there he is waving his arms about in front of a sign that reads I AM A MAN. Now he's at his blackboard, probing the money behind the perfidious liberal organization Media Matters: "\$4.3 million from Tides Foundation," he murmurs, wonderingly. "That's George Soros! Then there's 2.3 [million] from the Bohemian Foundation ... Huh, that's almost like the ancient god Baal ... Are you seeing the pattern here at all? Are you beginning to see the pattern?"

So let's watch some GBTV. Comedy first: *The B.S. of A.*, with your host, Brian Sack. Skits, Maher-style monologues, sad smatterings of supportive laughter from a tiny off-camera audience. "A new poll found that 52 percent of Republican voters in Mississippi believe that President Obama is a Muslim. When informed of the statistic, the president sighed, shook his head, and rolled up his prayer rug." Groan. The show's *Sesame Street* spoof, "Pumpnickel Boulevard,"

raises the ghost of a smile: "Feelin' good, havin' fun / Everybody's number one!" What the hell, a lampoon of mushy pluralism—I can dig it. But then a puppet called Lexie pops up: "There's Lexie, the tenured schoolteacher!" What does Lexie have to share with us? "Stupid governor wants to change our union contracts so that I can get fired for underperforming!" Double groan, with a splash of screw-you. Actually, the most poignant comedy I found on *The B.S. of A.* came courtesy of John Derbyshire, at the time a writer for *National Review*, who dropped by the studio to plug his book *We Are Doomed: Reclaiming Conservative Pessimism*. A bracingly sour presence, grimacing over a glass of bourbon: "You know, pessimism—the trouble with pessimism is, it's anti-social. Everybody hates you. Everybody hates me, anyway." And so it came to pass: within weeks of this appearance, having posted several paragraphs of clinically racist argumentation to the online *Taki's Magazine*, Derbyshire found himself universally vituperated (and fired by *National Review*).

Then there's the reality TV, a show titled *Independence USA*, in which we follow Pennsylvania's Belcastro family as it digs in for societal breakdown. The vibe is bucolic and mild: Nick the horse treads glumly across his paddock while Frank Belcastro, paterfamilias, chivvies his long-suffering brood through apprenticeships in blacksmithery and gunpowder manufacture. Frank is like any tinkering, pottering dad figure, except that his handyman reveries open onto a landscape by Hieronymus Bosch. "The filter is outside," he declares through his enormous mustache while working on ventilation holes in the roof of the Belcastro bunker (a partially buried shipping container), the better to preserve the clan in the event of atmospheric contamination. GBTV is right on the curve here, deep in the meme. From the frowning woodsmen of the National Geographic Channel's *Doomsday Preppers* to the zombie-infested pastures of

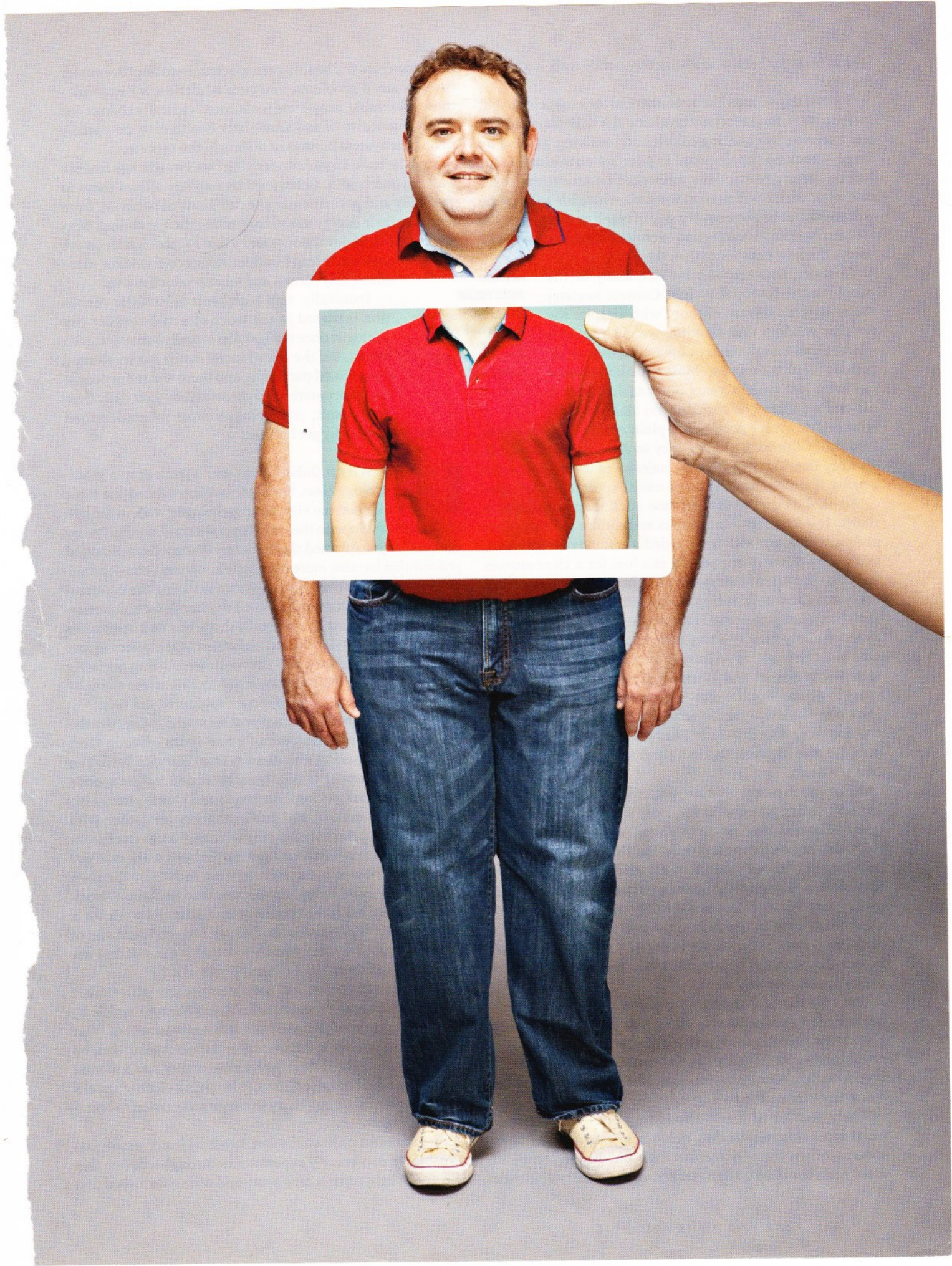
Hershel's farm in AMC's *The Walking Dead*, television is having a little end-times-in-the-heartland moment. That *Independence USA* happens to be a hasty warming-over of *Apocalypse, PA*—the Belcastros' previous attempt at a reality show, dumped by the History Channel after just three episodes—merely evidences the spirit of off-the-grid thrift that prevails at GBTV.

*Liberty Treehouse* is GBTV's show "for the younger set." Here you can step aboard the BioBus (it runs on vegetable oil), explore the history of the jelly bean, and learn what happens when you put dry ice inside a latex glove. It's a pretty good show. You can also listen to the host, Raj Nair, gush about the Big Cheese, his visionary CEO. "Glenn is my boss," he told viewers on March 6, "so I see him a lot, and if there's one person he really reminds me of, it's that of Walt Disney. This guy who has dreams ... People are like, 'Ah! Ain't gonna happen! No way! Too crazy, too big!' But just like Walt Disney, Glenn's like, 'All right!' and that just *fuels him even more*."

This is really the key to GBTV. Walt Disney, the ancient god Baal, whoever: Glenn Beck's dream is bigger than all of us. If you think he's going to settle for this, for exile, for blustering and bunkum-izing in an Internet backwater to a few hundred thousand true believers, then you don't know Glenn Beck. In December, a GBTV press release announced the construction of a new HQ in Dallas, ominously promising that GBTV Studios would become "a multi-platform destination for the fusion of entertainment and enlightenment." Has he seen around the corner, to the moment when TV and the Internet converge at last? It's coming, we all know it's coming. And Beck is a man of the future. He's off your screen, for now. His frog-boilings and waterworks do not currently impinge upon your mind. But as Arnold warned us, in his beautiful Terminator accent—and here the Beck-ness of it all invites an atrocious joke—*he'll be Beck*. ■

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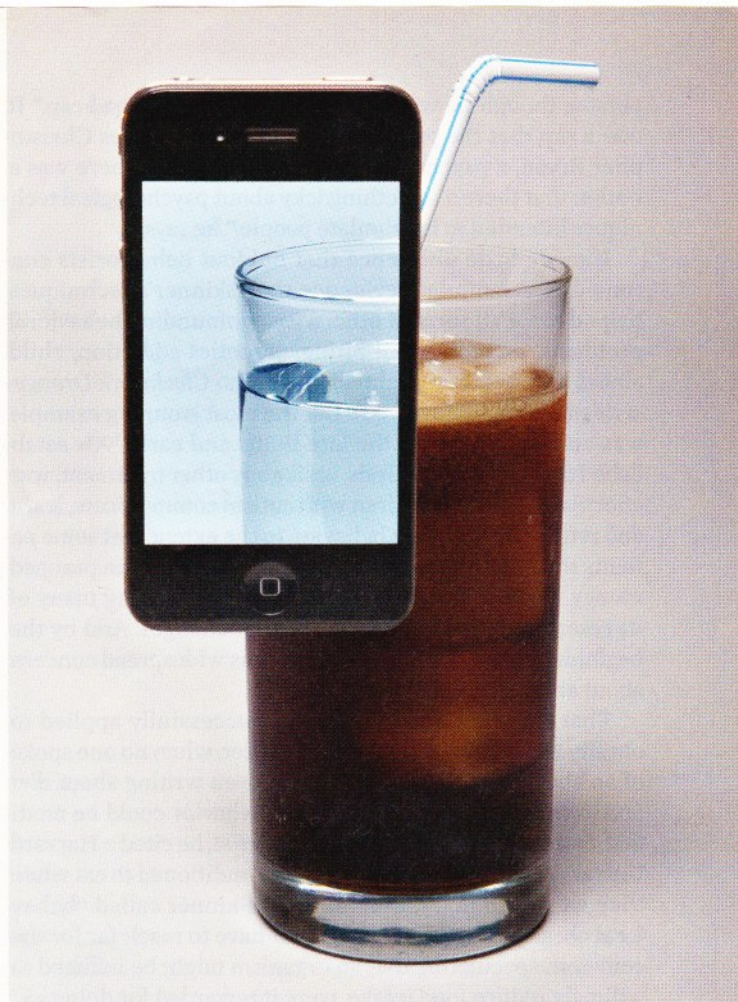
he never used it again, arguing passionately and publicly throughout the rest of his life against the use of punishment in school, at home, and in the workplace. And he never had anything to do with trying to change sexual orientation, or any other aspect of identity. Skinner sought to shape only consciously chosen, directly observable behavior, and only with rewards; the entirely un-Skinnerian therapy to which the reporter was alluding is a form of “classical,” or “Pavlovian,” conditioning that trains a subject to reflexively associate a pleasant stimulation with an unpleasant one. The field Skinner founded, known as “behavior analysis,” has overwhelmingly hewed to the example he set in these regards. (And, for the record, “that famed rat researcher” worked, except in his earliest experiments, almost exclusively with pigeons.)

Spock and the *Inquirer* reporter are typical of Skinner’s critics in their ignorance of his work, yet Skinner’s theory was at its core so simple that it sounds purely commonsensical today: all organisms tend to do what the world around them rewards them for doing. When an organism is in some way prompted to perform a certain behavior, and that behavior is “reinforced”—with a pat on the back, nourishment, comfort, money—the organism is more likely to repeat the behavior. As anyone who has ever taught a dog to sit or a child to say “please” knows, if the cycle of behavior and reinforcement is repeated enough times, the behavior becomes habitual, though it might occasionally need a booster shot of reinforcement.

Skinner himself worked mostly with animals, famously training pigeons to guide missiles by pecking on a video screen placed inside the nose cone. But his followers went on to demonstrate in thousands of human studies that gentle, punishment-free behavior-modification techniques could improve learning, modify destructive habits, and generally help people lead healthier, more satisfying, more productive lives.

Behaviorism exploded in prominence in the 1950s and ’60s, both in academic circles and in the public consciousness. But many academics, not to mention the world’s growing supply of psychotherapists, had already staked their careers on the sort of probing of thoughts and emotions that behaviorism tends to downplay. The attacks began in the late 1950s. Noam Chomsky, then a rising star at MIT, and other thinkers in the soon-to-be-dominant field of cognitive science acknowledged that behavior modification worked on animals but claimed it did not work on people—that we’re too smart for that sort of thing. Then, seizing on Skinner’s loudly proclaimed conviction that communities should actively shape human behavior to promote social justice and harmony, they argued that if behavior modification were to work on humans, it would be a morally repugnant and even fascist method of forcing people to toe an official line.

In 1971, Stanley Kubrick’s seminal film *A Clockwork Orange* echoed this fear by centering on a government’s attempt to reduce criminal behavior via methods amounting to a brutal



caricature of behavior modification: the “debilitating and will-sapping techniques of conditioning” that presaged “the full apparatus of totalitarianism,” as one character puts it. (The movie actually depicts Pavlovian, not Skinnerian, conditioning—a distinction lost on the public.) That same year, *Time* put Skinner on its cover, headlining its profile “Skinner’s Utopia: Panacea, or Path to Hell?” The overheated charges stuck. By the mid-1970s, the behavior-analysis field had essentially gone underground, its remaining practitioners having moved from prominent universities to relatively obscure ones.

Vargas took me to Harvard to see one of the few signs that her father was once the luminary of its psychology department, or indeed that he was ever there: an odd, cluttered display of circuit boards, random machinery, and a photo of Skinner, placed next to a self-service café in the basement of the psychology building, a curiosity to be contemplated over a cappuccino.

Skinner remains a staple of Psych 101 at most colleges, but typically only for a brief, often sneering mention, as if behaviorism was a strange, ugly fad. “He became a whipping boy for cognitive scientists,” says Dean Keith Simonton, a psychologist at the University of California at Davis, who has studied how his field views Skinner. “Psychology students were taught that his techniques didn’t work, that it was a bad direction for psychology to go in, and that he was a bad

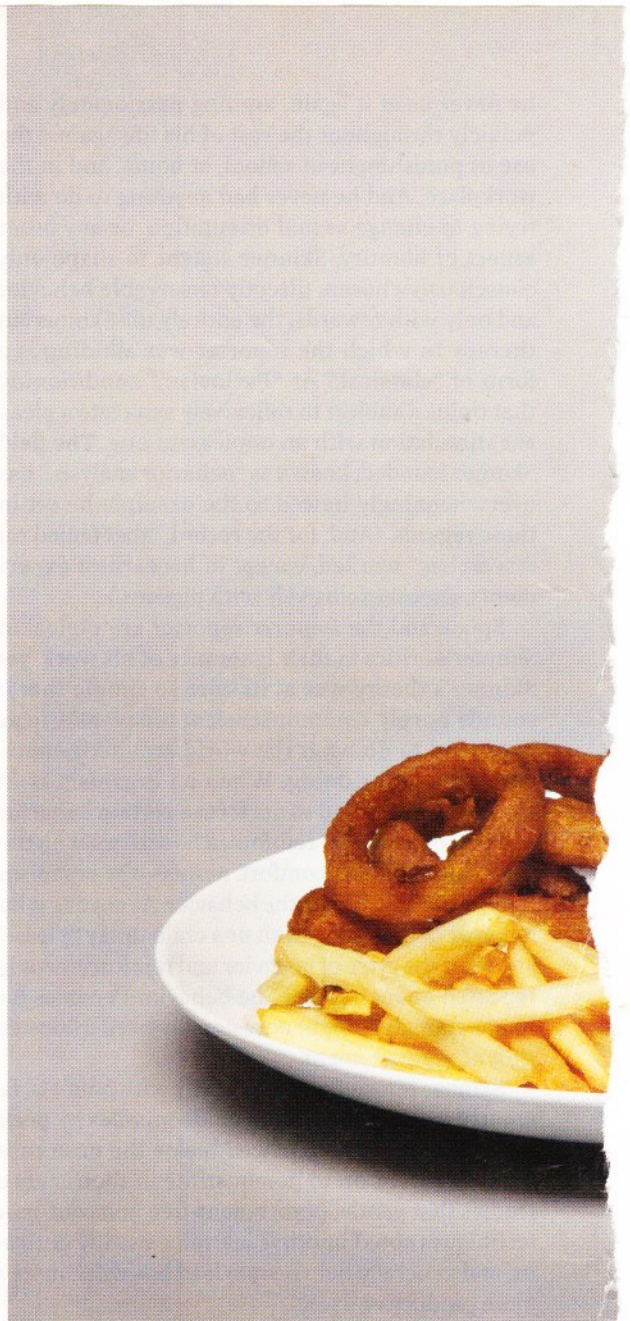
person, though he wasn't. He just got kind of a bad rap." It was a rap that the public bought wholesale, notes Christopher Bryan, a psychologist at UC San Diego. "There was a notion that there's something icky about psychological techniques intended to manipulate people," he says.

It made little difference that holdout behaviorists continued to accumulate evidence that Skinner's techniques helped tame all sorts of otherwise confounding behavioral problems, including nail-biting, narcotics addiction, child abuse, and, yes, criminal recidivism (no *Clockwork Orange*-style punishment involved). But the most stunning example was autism: studies in the late 1980s and early '90s established that behavior analysis, unlike any other treatment, was effective in helping children with autism communicate, learn, and refrain from violent behavior, to the extent that some patients shed their diagnosis. The success with autism pumped money into the field of behavior analysis, leading many of its researchers to look for other big challenges. And by the beginning of the 21st century, there was widespread concern about an obesity epidemic.

That Skinner's theory could be successfully applied to obesity was no surprise. Decades earlier, when no one spoke of an obesity problem, Skinner had been writing about diet and exercise as an example of how behavior could be modified. In a 1957 paper in *American Scientist*, he cited a Harvard University study in which rats were conditioned to eat when they weren't hungry, causing what Skinner called "behavioral obesity." His followers did not have to reach far for the converse, speculating that an organism might be induced to willingly reduce food intake, were it rewarded for doing so.

They were eventually proved right by Weight Watchers, which launched its "behavior modification plan" in the mid-1970s. The program's close adherence to Skinner's basic principles has consistently garnered some of the best long-term weight-loss results of any mass-market program. The key characteristic of Weight Watchers and other Skinnerian weight-loss programs is the support and encouragement they provide to help participants stick with them. (Much the same is true of AA, which is strikingly similar to a behavior-modification program.) Weight Watchers and the other programs do not claim to magically burn fat, or make appetite disappear, or blast abs. They aim to gradually establish healthful eating and moderate exercise as comfortable, rewarding routines of daily life rather than punishing battles of willpower and deprivation.

The specifics may sound familiar: set modest goals (to encourage sustainable progress and frequent reinforcement); rigorously track food intake and weight (precise measurement is key to changing behavior, especially when it comes to eating, since a few bites a day can make the difference between weight loss and weight gain); obtain counseling or coaching (to diagnose what environmental factors are prompting or rewarding certain behaviors); turn to fellow participants for support (little is more reinforcing than encouragement from peers, who can also help with problem-solving); transition to less-calorie-dense foods (to avoid the powerful, immediate reinforcement provided by rich foods); and move your body more often, any way you like (to burn calories in a nonpunishing way).



Study after study proves the effectiveness of this rough Skinnerian formula, which is the basis of the great majority of well-regarded weight-loss programs. "Willpower doesn't work," says Jean Harvey-Berino, a University of Vermont behavioral scientist who researches weight-loss methods. "What works heavily relies on Skinner—shaping behavior over time by giving feedback, and setting up environments where people aren't stimulated to eat the wrong foods." As the evidence continues to pile up, it's getting harder to find weight-loss researchers who disagree, says Jennifer Shapiro, a psychologist specializing in weight loss and the scientific director at Santech, a San Diego health-technology firm. "More and more studies demonstrate the effectiveness of behavioral approaches based on Skinnerian reinforcement."

Not that Skinner ever gets much credit. The experts who



run successful behavioral weight-loss programs, including Weight Watchers, seem at best vaguely aware of these techniques' Skinnerian roots, or choose to downplay them. Instead, they frame their programs in the more fashionable terms of behavioral economics or social-cognitive theory, or offer the nontheoretical argument that they just plain work. But this would have been fine with Skinner, says Vargas. "He used to say that the ultimate worth of a science is in how much good it can do in the world."

So widely accepted is the long-term effectiveness of Skinnerian weight-loss programs that most well-regarded bariatric-surgery clinics require patients to follow such a program before surgery, in order to prove their ability to avoid regaining much or even most of the weight after—as more than one-fourth of bariatric patients eventually do, according

to some studies. Even clinical programs for rapid weight loss rely on Skinner's tenets. The 25-year-old Weight Management Program at the Miriam Hospital—one of Brown University's teaching hospitals in Providence, Rhode Island, and the home of the National Weight-Control Registry—is a highly regarded program in which many of the patients are more than 200 pounds overweight. Typically, patients are started out on an Optifast diet, a physician-mediated program that replaces some or all meals with liquids and food bars in order to "give patients some distance from food," as one psychologist there puts it. But the Miriam program's goal is for its patients to gradually build healthy eating habits with ordinary food, and to add in daily walks. The program reports that about one-third of its patients keep all the weight off for two or more years. And that figure, which is some 16 times the success

rate implied by the “98 percent gain it all back” statistic we keep hearing, turns out to be fairly typical of leading clinical weight-loss programs.

But despite their relative success, Skinnerian weight-loss programs have not become the default treatment for obesity the way AA has for alcoholism. One reason, of course, is that most would-be weight-losers can’t afford these programs (insurance usually won’t cover them) or don’t have the time, patience, or motivation to commit to one. At up to \$3,500, the six-month Miriam outpatient program is a relatively good deal, especially compared with Canyon Ranch, which offers a well-regarded residential program for about \$1,200 a day.

“We know how to get people to eat healthier and exercise,” says Steven Blair, an exercise and epidemiology researcher at the University of South Carolina. “The question is how to roll out the needed behavioral strategies to 50 million unfit adults in the U.S. Even if there were enough trained counselors to work with that many people, which there aren’t, the cost issues would be overwhelming.”

And there’s another limitation. These programs work by sticking participants in a “Skinner box”—which was, literally, a closed glass box in which Skinner trained his animals; figuratively, it’s an environment that can be tightly controlled and in which behavior can be rigorously tracked, so as to ensure the dominance of the prompts and reinforcements that lead to a desired change. When a patient is “in the box”—that is, actively participating in a formal program—results are reliably good. The bigger challenge comes when people leave the program to plunge back into an environment rife with caloric temptation.

Most programs try to provide remote monitoring and support, but inevitably, many patients let these looser ties dissolve, and then they gain back weight. That’s why these programs tend to report long-term success rates of only about 30 percent. This is a much bigger problem for mass-market programs like Weight Watchers, which don’t charge enough to offer individual coaching or frequent, intimate group meetings. Effective as it is for a highly affordable program, Weight Watchers places its clients in a Skinner box of gossamer walls.

**T**WELVE YEARS AGO, Michael Cameron was on his hands and knees in his doctor’s office. He had once been able to do dozens of push-ups, but because he had put on 105 pounds in the five years since college, his arms now shook with the effort of not collapsing to the floor. “What’s wrong with me?” he moaned. His doctor suggested antidepressants. Cameron walked out of the office and had an epiphany. “I thought to myself, *I know how to solve this problem,*” he says.

Actually, solving behavior problems was what he did for a living. Cameron was an experimental psychologist specializing in behavior analysis at McLean Hospital, Harvard’s teaching hospital for psychiatric disorders, and was the founding chairman of the behavioral-analysis department at Simmons

College, in Boston. Amid all the various weight-loss solutions he’d considered, he’d never thought to try his own field’s techniques. Now he asked himself: *What would Skinner do?*

Cameron looked for aspects of his environment that were abetting his overeating. He worked nonstop at the office, eating very little there, so he was famished when his commute home took him past a long line of fast-food restaurants. After scarfing a meal from one of those, he would come home to a paperwork session conducive to the mindless munching of calorie-bomb snacks—he was particularly partial to peanut butter. He would vow to exercise the next morning but find himself running out the door to work instead. Little by little, he started making changes. He prioritized eating a decent breakfast and lunch, and found a new route home that bypassed the junky restaurants. He came home and immediately prepared healthy snacks, including a low-calorie peanut-based food, so they’d be in front of him while he worked. To kick-start his workouts, he got his gym bag ready at night and left it in front of the door. He religiously tracked his food intake, exercise, and weight, graphing the results to see how his efforts were paying off. He enlisted his colleagues, friends, and family to support him.

Cameron eventually lost more than 100 pounds, and has kept every one of them off in the years since, losing a few more besides. Though he focuses on children with special needs—he’s now the clinical director of Pacific Child and Family Associates, a national chain of clinics headquartered in Santa Paula, California—he also works independently with a small number of clients who want to lose weight. Five years ago, recognizing that he didn’t have time to personally help as many people as he’d like, he started wondering how he could extend his reach. Could weight-loss programs be administered remotely, or even in a semi-automated fashion?

The tools seemed to exist. Plenty of Web-based programs tracked food intake and exercise, and smartphone apps were starting to offer similar options. Videoconferencing allowed not only for remote one-on-one coaching, but also for group meetings. And Twitter made impromptu check-ins, questions, and encouragement easy. “I realized there wasn’t any part of it that couldn’t be done on a screen,” Cameron says. “And that meant it would be easy to scale up.” He started some pilot projects, enlisting graduate students to help coach and lead groups.

It was Cameron’s name I gave to my brother that night—I had heard about his program from scientists in the behavior-modification field. Starting a few weeks later, the first thing Dan did every morning was step on a scale that wirelessly transmitted his weight to his computer, which automatically Tweeted any loss or gain to the other participants in Cameron’s program. Every time I saw him, he’d pull out his phone to read an encouraging tweet from one of them, or fire off one of his own, or plug in the components of the meal he was eating, or check how many minutes of walking he’d logged that day. Sometimes he’d excuse himself for 10 minutes to take part in a group meeting on his laptop.

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## Should we be wary of utilities that try to shift our energy use or health insurers that try to change our diets? Will we even notice?