

A large, white, stylized question mark is positioned in the upper left quadrant of the image. It is superimposed over a wooden ruler that runs diagonally across the frame. The ruler has markings in inches and centimeters. The background is a light-colored surface, possibly a piece of paper or a table.

A NEW MIRROR

Shlomo Benartzi

In the 21st century, human nature has discovered a new mirror.

Thanks to the rise of smartphones and wearables, such as the Apple Watch, we can now monitor our body and behavior in exquisite detail, tracking everything from the amount of sleep we get to the number of calories we swallow. We can count our steps and resting pulse, compare our social network and spending habits. (There's even a smartphone app that can tell you how often you check your smartphone.) Only a few years before, quantifying these aspects of life would have required a trained team of professionals. Now we can do it with the slim computer in our pocket.

Unfortunately, it's not clear that this new feedback is helping us make better decisions. The ordinary bathroom scale, for instance, offers us plenty of feedback we need about our weight. It's cheap, reliable and doesn't suffer from any battery issues. And yet, it has most definitely not solved the obesity crisis.

That's because the latest research demonstrates that providing feedback is only the first step. Before the information can be effective, it has to be communicated properly, in accordance with a set of behavioral principles. New digital mirrors are certainly cool. I want to make them useful.

Several years ago, the psychologists Avraham Kluger and Angelo DeNisi conducted an authoritative review of feedback interventions on human performance. They looked at 607 different experiments and 23,633 distinct experimental observations. They analyzed feedback trials for fighter pilots and kids learning how to read, for factory workers on an assembly line and for dieters trying to lose weight. Such a study is known as a meta-analysis, as the scientists were trying to discern general trends from a very large and varied body of research.¹

“The latest research demonstrates that providing feedback is only the first step. Before the information can be effective, it has to be communicated properly, in accordance with a set of behavioral principles.”

What did Kluger and DeNisi find? While feedback interventions improved performance on average, in about 38 percent of cases the feedback actually led people to do *worse*. The dieters gained weight; the students struggled to learn; the workers were less productive. It’s a sobering finding, a reminder of just how hard it is to structure effective feedback.

¹ Kluger, Avraham N., and Angelo DeNisi. “The effects of feedback interventions on performance: a historical review, a meta-analysis, and a preliminary feedback intervention

The same pattern extends to the digital world. While much of the feedback we get from our devices is almost certainly useless, or even detrimental, I want to look at a successful example. This success story doesn't depend on some expensive mechanical sensor or a fancy graphic interface. Instead, the power of its feedback is largely due to *timing*, as it makes information easily available at the exact right moment.

To understand why the timing of this feedback is so helpful, I need to give you a little background. Until recently, the only way to get up-to-date details about your bank account was to call your bank or visit a branch. The same was true of credit cards and investment accounts—most people didn't know how much money they'd saved or spent until the monthly statement arrived in the mail. It took work to learn about our own financial details.

Smartphones have changed all that. Every big bank and major credit card now has an app, allowing customers to monitor their balances from anywhere. To understand the implications of these new forms of feedback, Yaron Levi, a Ph.D student at UCLA, and I decided to study users of a website called Personal Capital, a much praised service that allows individuals to link all of their financial accounts in a single place.² The star attraction of Personal Capital is the Dashboard, in which users can track their investment performance and spending behavior at a glance.

² Yaron Levi and Shlomo Benartzi, 2014, "Economic Behavior in the Digital Age," Working Paper, UCLA.

For instance, the Dashboard breaks down, by category, where the money goes; it shows you how much you spend at clothing stores and on entertainment, how much goes to transportation and the percentage of income that's devoted to paying off the mortgage. What's more, this feedback can be accessed at anytime, from nearly anywhere. Yaron and I were interested in how all this new financial information would impact the purchasing decisions of consumers.

“The power of its feedback is largely due to timing, as it makes information easily available at the exact right moment.”

We focused on a subset of long-time Personal Capital users who downloaded the mobile app shortly after its release. Because these subjects had previously been visiting the website, we were able to focus on the impact of the app on their spending habits. The first thing we discovered is that app users got far more feedback. While Personal Capital web users viewed their financial dashboard an average of 2.14 times per month before installing the app, that number jumped to 12.47 times per month after installation. It's important to note that this increase was entirely driven by new mobile views, as website visits stayed constant; the app was additive, and not a substitute.

Here's the punchline: all of this new financial feedback significantly influenced people's spending decisions, with the typical app user decreasing their monthly spending by 15.7 percent. Not surprisingly, almost all of this decrease came in the form of discretionary spending, with users spending far less on items such as dining out. These results fit with recent government surveys, which find that most consumers with access to their financial information on mobile phones check their balances before making large purchases. Of those who check, 50 percent decide to *not* buy an item because of the feedback.³ It only makes sense, then, that making this information far easier to access, and giving consumers information about all of their accounts in one place, would lead to even more responsible spending habits.

To put this field result in perspective, it's worth considering other attempts to help consumers spend less money and save more.⁴ In a study published in 2002, a team of economists led by James Choi at Harvard University studied the impact of a financial education seminar on retirement planning.⁵ While 68 percent of attendees admitted their savings rate was too low, only 3 percent of attendees actually increased their contribution rate to their 401(k).

3 Board of Governors of the Federal Reserve System. Consumers and mobile financial services. 2014.
<http://www.federalreserve.gov/econresdata/consumers-and-mobile-financial-services-report-201403.pdf>

4 <http://www.nerdwallet.com/blog/credit-card-data/average-credit-card-debt-household/>

5 Choi, James J., et al. "Defined contribution pensions: Plan rules, participant choices, and the path of least resistance." Tax Policy and the Economy, Volume 16. MIT Press, 2002. 67-114.

In a separate study, subjects attended a one-hour seminar on retirement savings. Among those subjects who were not yet enrolled in a 401(k), all of the attendees said they wanted to start saving. Sadly, only 14 percent ended up enrolling after the seminar. If these new 401(k) enrollees saved at the typical rate of 6 percent, then the expensive and time-consuming seminar would have increased the average saving rate for the total pool of attendees by less than one percent (14% times 6%). They should have given them an app instead.

“It only makes sense ... that making this information far easier to access, and giving consumers information about all of their accounts in one place, would lead to even more responsible spending habits.

There are, of course, numerous caveats to our finding. For starters, the impact might not last—we only have data from the four months following app installation. It's possible users might stop checking their accounts and revert to their old spending habits. Secondly, Personal Capital users tend to be younger, wealthier and more tech-savvy than the general population. More research is needed to ensure that these results hold true for everyone else, too.

Nevertheless, I think our data is a clear example of just how big an impact digital feedback can have. Although the Personal Capital app itself provides little guidance—it doesn't tell you not to spend money, or how much to save—consumers were able to extrapolate from the information. They knew what they needed to do, provided they got feedback when they needed it most, which is when they were making a purchasing decision. Sometimes, timing is everything.

There is a larger lesson here. Excess consumer spending is often described as a problem of limited self-control; consumers don't have the willpower to forgo a purchase. And given the intransigence of many self-control problems—the American obesity rate, for instance, has slowly gotten worse despite a long list of interventions—it's easy to lose hope, to assume that we can't do anything to boost our discipline. **However, our field study is a reminder that we can change for the better, and that a simple app offering straightforward feedback can significantly enhance our ability to make responsible financial decisions.** 📌

Info



BUY THE BOOK | Get more details or buy a copy of [The Smarter Screen](#).

ABOUT THE AUTHOR | Shlomo Benartzi is a professor and co-chair of the Behavioral Decision-Making Group at UCLA's Anderson School of Management. He is the author of *Save More Tomorrow* and *Thinking Smarter*. He has extensive experience applying behavioral economic insights in the real world, having increased the saving rates of millions of Americans through his work with Richard Thaler, and has advised many government agencies and businesses.

→ **SEND THIS** | [Pass along a copy](#) of this manifesto to others.

→ **SUBSCRIBE** | [Sign up for e-news](#) to learn when our latest manifestos are available.

This document was created on December 16, 2015 and is based on the best information available at that time. The copyright of this work belongs to the author, who is solely responsible for the content. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs License. To view a copy of this license, visit [Creative Commons](#) or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, California 94305, USA. Cover image from [Unsplash](#). You are given the unlimited right to print this manifesto and to distribute it electronically (via email, your website, or any other means). You can print out pages and put them in your favorite coffee shop's windows or your doctor's waiting room. You can transcribe the author's words onto the sidewalk, or you can hand out copies to everyone you meet. You may not alter this manifesto in any way, though, and you may not charge for it.

About ChangeThis

[ChangeThis](#) is a vehicle, not a publisher. We make it easy for big ideas to spread. While the authors we work with are responsible for their own work, they don't necessarily agree with everything available in ChangeThis format. But you knew that already.

800ceoread

ChangeThis is supported by the love and tender care of 800-CEO-READ. Visit us at [800-CEO-READ](#) or at our daily [blog](#).