

Using Decision Styles to Improve Financial Outcomes

Why Every Plan Needs a
Retirement Check-Up

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Introduction

By leveraging the insights of behavioral science and the data of the digital world, we can tailor our suggested “course corrections.”

Saving for retirement is a long journey, not a one-time event. Unfortunately, too many plan participants, advisors and sponsors treat the retirement journey as a one-time event. For example, if a new employee is automatically enrolled in a 401k plan, but decides to opt-out and not save, the common practice is to “write the person off” and never engage him or her again.

The reason it’s a mistake to treat the retirement journey as a one-time event, and not an extended journey, is that it fails to account for the risk of getting off track, as well as the opportunity for course corrections. After all, life is full of uncertainty: people get married (or get divorced), have children, buy a house, change jobs, all while the markets go up and down. These life events often require new approaches to saving and investing. By treating retirement as a one-time event, we don’t provide an opportunity for easy course corrections along the way. The end result is that even those who are saving money for retirement might be following a path that’s no longer the best way forward.

The goal of the retirement check-up is to ensure that people are on a path for a successful retirement. Unfortunately, the evidence suggests we have a lot of work to do. According to our data, about nine in ten plans are not on a successful path and their participants did not use a thoughtful decision-making process to choose their path. In contrast, only one in ten plans is on a successful path.¹ However, few of these plans seemed to follow a thoughtful decision-making process, thus raising the possibility that an improved decision making process by their participants could lead to an even more successful path.

The scope of the problem demands a timely solution. By leveraging the insights of behavioral science and the data of the digital world, we can tailor our suggested “course corrections.” After all, just because people failed to enroll years ago doesn’t mean they don’t want to enroll now. And just because people are enrolled in a plan doesn’t mean they don’t need help.

¹These numbers are based on Voya data analysis.

Decision-Making Styles

The proposed plan check-up begins with a diagnosis of how plan participants made their original enrollment decisions or set the starting point of their retirement journey. Of course, if the participants revisited their original elections and made course corrections, then the most recent elections should be evaluated. However, data suggests that most participants stick to the path of least resistance and rarely revisit their choices. One study finds that 72.8 percent of participants have not changed the allocation of their account balances over a ten-year period and 47.1 percent have not changed the allocation of their contributions.²

How did plan participants make their initial decisions? The general consensus among behavioral economists is that there are two modes of decision making.³ (This is known as the dual process model.) There is “System 1,” which is fast, instinctive and unreflective. “System 2,” meanwhile, is slow, deliberate and requires significantly more attention and effort. Since System 2 requires more effort, we tend to avoid it.

Most behavior is governed by the instinctive system: you don’t have to think about how to walk, or drive, or hit a baseball. Of course, not all instinctive decisions are quite so automatic. In everyday life, our instinctive decisions exist along a continuum, and often involve a blend of instinct and reflection. The same principle applies to reflective decisions, which are not always reason in pure form. We might be in reflective mode while taking the SAT, but combine reflection and instinct while trying to decide which shoes to buy.

Despite this continuum of decision-making styles, many of our major life decisions could benefit from a slower, more reflective form of thinking, even if it consumes more mental effort. If you’re taking out a mortgage, or considering a career change, or planning for retirement, then you should take your time and reflect on your options. Your impulsive instincts could easily lead you astray. This implies that people who made more instinctive decisions about their retirement plan elections are much more likely to require significant course corrections. They may also need these corrections to happen on a more frequent timescale, as they are often dealing with large gaps between their projected retirement income and their goals.

Although it’s previously been difficult to diagnose a person’s decision-making style, new digital measurements have the potential to allow us to slot people into one of these two categories, which we will loosely call instinctive versus reflective. Take the decision to enroll in a retirement plan either on a website or through an app. There are at least three main dimensions we can use to assess decision-making style and construct a diagnostic Reflection Index.

² Ameriks, John, and Stephen P. Zeldes, “How do Household Portfolio Shares Vary with Age?” Working Paper, September 2004, Columbia University.

³ Kahneman, Daniel. *Thinking, Fast and Slow*. Farrar, Straus and Giroux. 2011.

1 Attention

By tracking the amount of time a user spends on the site, and whether or not they were multi-tasking while engaging with the site, we can estimate the amount of attention they devoted to their retirement plan choices. The less time people spend and the more they multi-task on sites such as Facebook and Twitter, the greater the probability that the decision is instinctive rather than informed and reflective.⁴

2 Information Gathering

One of the prerequisites of a reflective decision is gathering information to reflect on. By following a user's path within the site, it's possible to measure the ways in which they allocated their attention and how thoroughly they studied the available resources and options on the website. Did they scroll down to read more of the text? Did they click to learn more about the retirement goals that have been set for them or how they were calculated? By tracking the amount of information on the screen that a user seeks out, we can estimate the amount of reflection that he or she devoted to the retirement decision.

3 Making Tradeoffs

When making a difficult decision, such as choosing a retirement path, it's important to reflect on the tradeoffs involved with various aspects of the decision. In the digital world, we can track whether or not people are engaging in such a reflective thinking process. For instance, a user might consider the tradeoffs involved with higher or lower savings rates by experimenting with the effect of different deferral rates on their projected retirement income. They might also explore how changes to their projected retirement age impact their estimated monthly benefits. (Sample user interfaces are provided in Figures 1a and 1b.) Furthermore, some users might move backwards during the process to rethink a decision, another sign of reflection. People who consider the tradeoffs involved when setting their deferral rates are more likely to make a reflective decision.

In the digital age it is possible to automate the identification of the decision-making style. What makes this identification so useful is that users who are more reliant on their instincts are far more likely to require significant course corrections.

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⁴ Those who spend more time multi-tasking when on a digital device are also more likely to lack cognitive control. This might be due to a habit of spreading their attention thin, or it might be triggered by an underlying cognitive control deficit. Either way, it suggests a clear correlation between multi-tasking and reduced cognitive control. (Ophir, Eyal, Clifford Nass, and Anthony D. Wagner, "Cognitive control in media multitaskers," *Proceedings of the National Academy of Sciences*, 2009, Vol. 106.37, pp. 15583-15587).

Figure 1a: Sample User Experience for New Enrollees

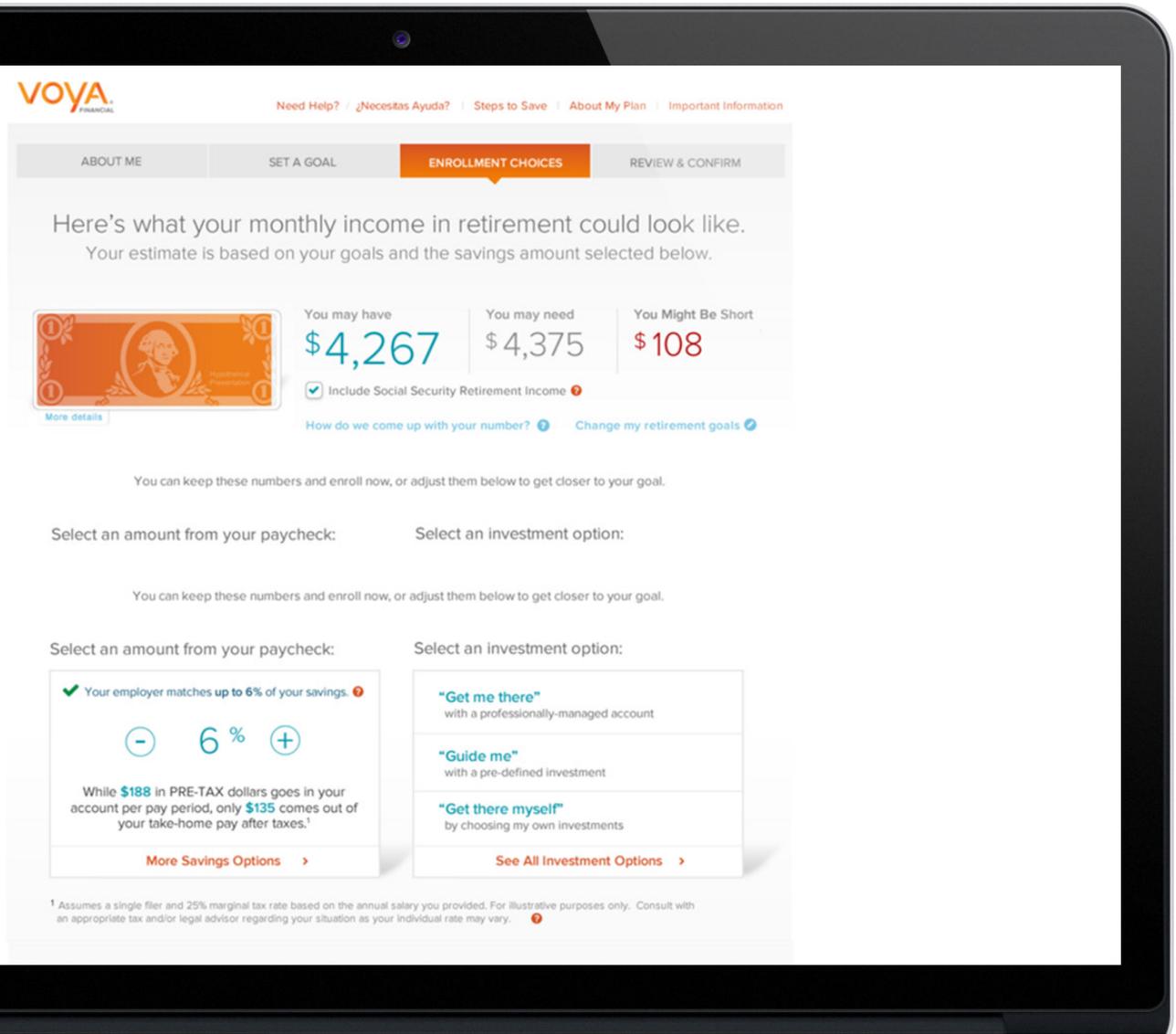
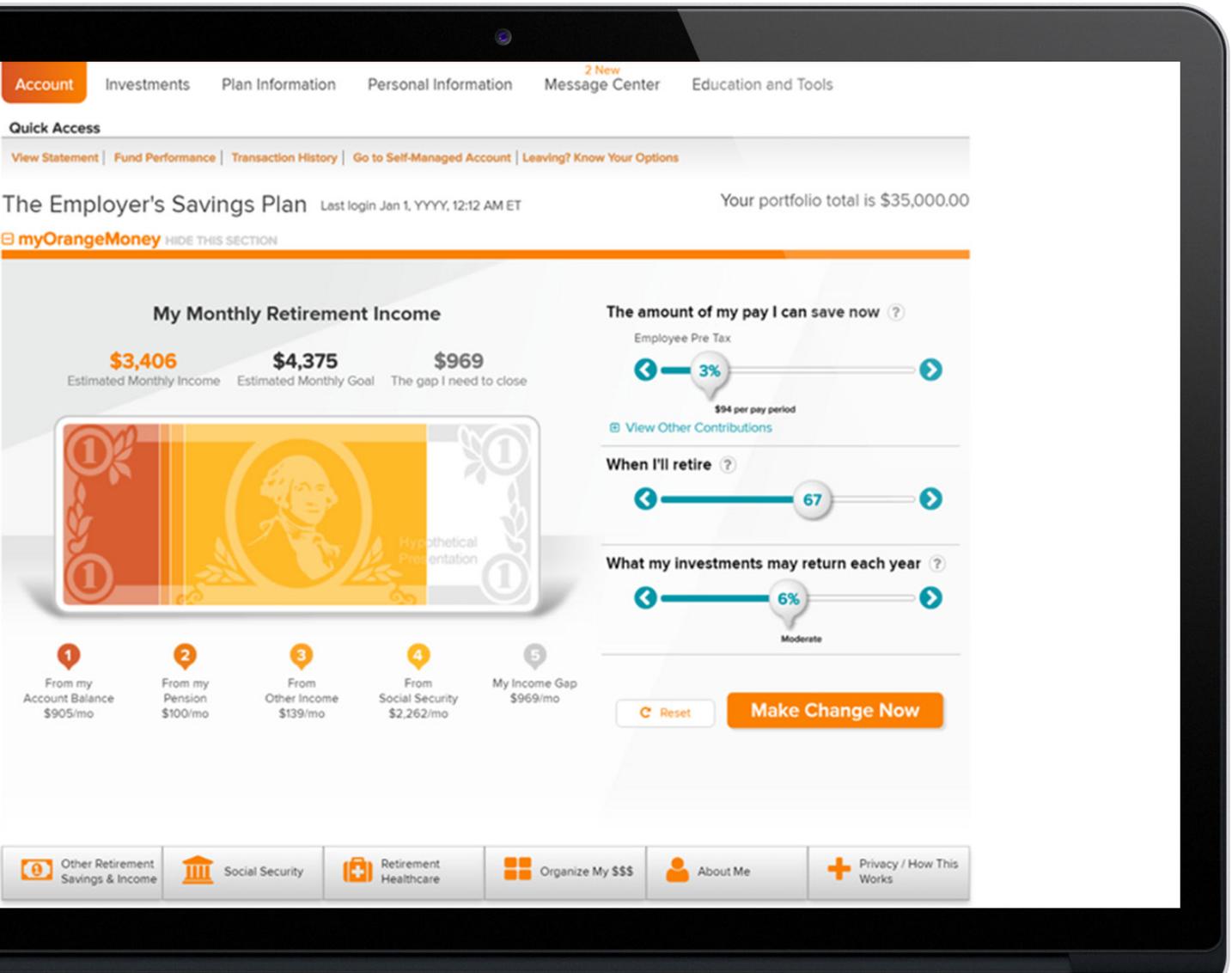


Figure 1b: Sample User Experience for Existing Plan Participants



The Reflection Index

The specific indicators used to construct the Reflection Index are displayed in Figure 2. To score participants on the Reflection Index, we assess them on three decision-making style indicators: attention, information gathering and making tradeoffs. This score allows us to better understand how participants in different plans are making their retirement decisions.

The Reflection Index is clearly correlated with retirement outcomes (see Figure 3). In particular, participants who score zero on the Reflection Index are projected to have income replacement of 56.0 percent, whereas those who score three on the Index are projected to have income replacement of 68.4 percent.⁵ We also repeated the analysis by income level to ensure that our Reflection Index is not just a proxy for income. The results show that within each income bracket more reflective participants have higher income replacement ratios. In addition, the gap in income replacement increases with income. Reflection is most important for higher income participants, as for them Social Security benefits provide a much lower percentage of income replacement. (Future analysis will break income replacement into defined contribution savings versus Social Security benefits.) One way to think of these results is that, depending on thinking style, participants either benefit from a “reflection bonus” that boosts their projected retirement income or risk suffering from an “instinctive tax.”

Within each income bracket more reflective participants have higher income replacement ratios.

It's important to note that the Reflection Index is designed to assess decision-making style at the plan level, which aggregates estimates of decision-making style across individuals. This is necessary for several reasons. The first reason is that it's often not practical for plan fiduciaries to offer re-enrollment to only some participants within a plan. The second reason is that, by offering recommendations at the plan level, we can minimize the limitations of the available data. Consider a participant who only spent one minute evaluating his retirement options. This speedy decision might be due to a lack of attention, or it might be caused by his advanced knowledge of retirement planning, which allows

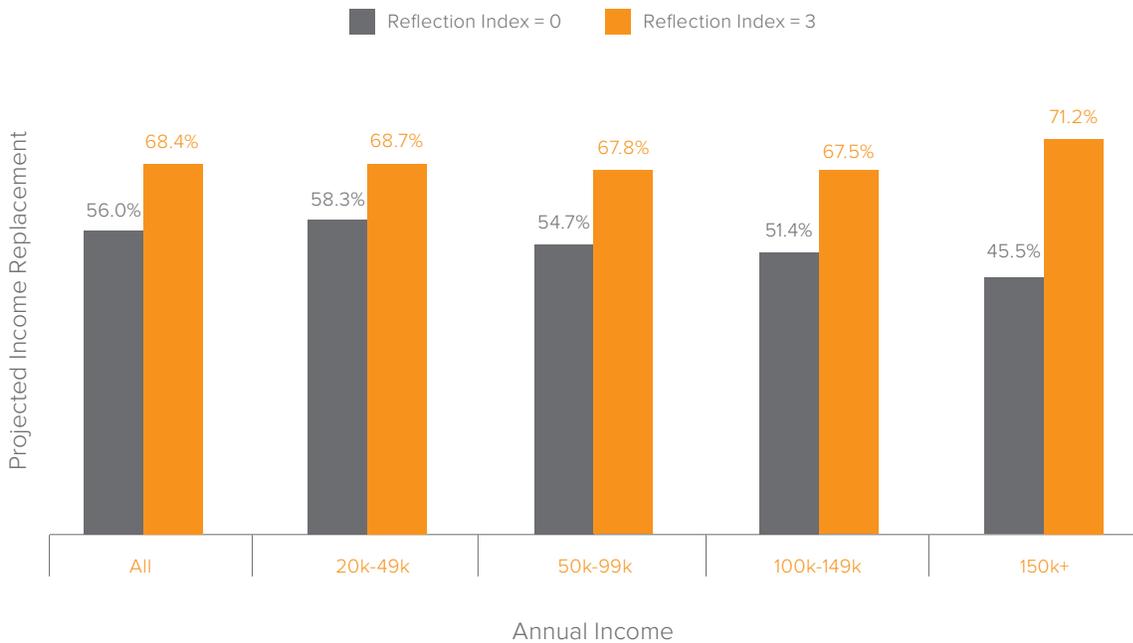
⁵ It is important to note that the retirement income projections include Social Security benefits. Had we taken out Social Security benefits, the increase in replacement ratios would have looked larger.

Figure 2: Components of The Reflection Index

DECISION DIMENSION	DECISION-STYLE INDICATORS	INSTINCTIVE	REFLECTIVE
Attention	Logged onto website or mobile app within past year	33.8% No	66.2% Yes
Information Gathering	Clicked on projected retirement income to learn more	93.0% No	7.0% Yes
Making Tradeoffs	Explored different savings rates, retirement age, or rates of return	77.9% No	22.1% Yes

Source: 655,227 Voya plan participants with deferral rate data as of June 30, 2016. Participants with an annual salary below \$20,000 or projected income replacement above 200 percent were excluded.

Figure 3: Projected Income Replacement by Reflection Score and Income



Source: 255,772 Voya plan participants with a reflective score of either zero or three. See Figure 2 for additional details.

him to quickly select the best options for his retirement journey. Of course, if the majority of people in a plan are spending less than a minute making retirement decisions online, that's probably a sign of instinctive thinking. The larger point is that making reliable assessments of individual decision-making requires extensive data collection, which might be easier for Facebook or Google than a retirement plan provider. However, existing data sets are appropriate for making diagnoses of decision-making style at the plan level and recommending interventions at the plan level.

To be considered a plan characterized by a reflective decision-making style, the average participant within that plan must show reflective thinking on at least two of the three indicators. I feel this is a low threshold. For example, if a participant logged into his account during the past year (one point) and explored his projected retirement income (one more point), he or she ends up with a total of two points and will be categorized as reflective. Yet, even with this low threshold, 99 percent of plans end up "instinctive" and only one percent are scored as "reflective" on the Reflection Index. If we lower the bar to having one and a half of the three reflective indicators, two thirds of plans still end up "instinctive."

While the Reflection Index seems to capture an important aspect of retirement success (that is, income replacement ratios), there are limitations that are worth considering. First, the initial set of decision style indicators was constrained by data that was readily available. While retirement plan providers have historically collected data on participants for the purposes of administrative record keeping, such as contributions and investment allocations, they have not amassed data on the behaviors of their participants. This is in stark contrast to companies such as Facebook, Netflix and Amazon, which invest heavily in the collection of data that can help them monitor and anticipate consumer behavior. The plan check-up process illustrates the importance of tracking online and offline behavior so that plan providers can analyze and improve outcomes. For instance, future versions of the check-up process may expand the list of indicators to include whether participants made decisions on a mobile device, as there is preliminary evidence that individuals reflect less about money matters on smartphones.⁶

A second limitation is that some retirement plan decisions are made offline by participants reaching out to the call centers or completing paper forms. Future versions of the Reflection Index may combine online and offline data to provide a broader perspective on the decision making style of participants. Lastly, the Reflection Index should be validated against more traditional measures of reflection, such as the Cognitive Reflection Test. (The Cognitive Reflection Test is designed to measure a person's propensity to override an instinctive, but incorrect, response to a series of questions with a more reflective and correct response.⁷)

Despite these limitations, the Reflection Index is highly correlated with retirement outcomes. To show how the Reflection Index and retirement outcomes interact during the retirement journey, we developed the 2x2 matrix in Figure 4. The x-axis (horizontal) describes the Reflection Index by plan, mapping the average decision-making process of participants onto the instinctive-reflective continuum. The y-axis (vertical), in contrast, describes projected retirement outcomes, and whether or not the average participant within that plan is on track to achieve their goal of 70 percent income replacement in retirement. (The exact goal can be customized by the employer and the advisor.)

As you can see in Figure 4, about nine in ten plans are characterized by instinctive decisions and poor retirement outcomes. This result is especially alarming given that the retirement outcome calculations already include projected Social Security benefits. In contrast, not a single plan in our data set is characterized by reflective decisions and good retirement outcomes.⁸ Thus, the vast majority of plans need help, and they need it now.

In the next section, I recommend different strategies for the retirement check-up, depending on where the plan falls in the 2x2 matrix. The goal is to identify interventions that are psychologically appropriate for the typical plan participant and capable of significantly improving their retirement outcomes.

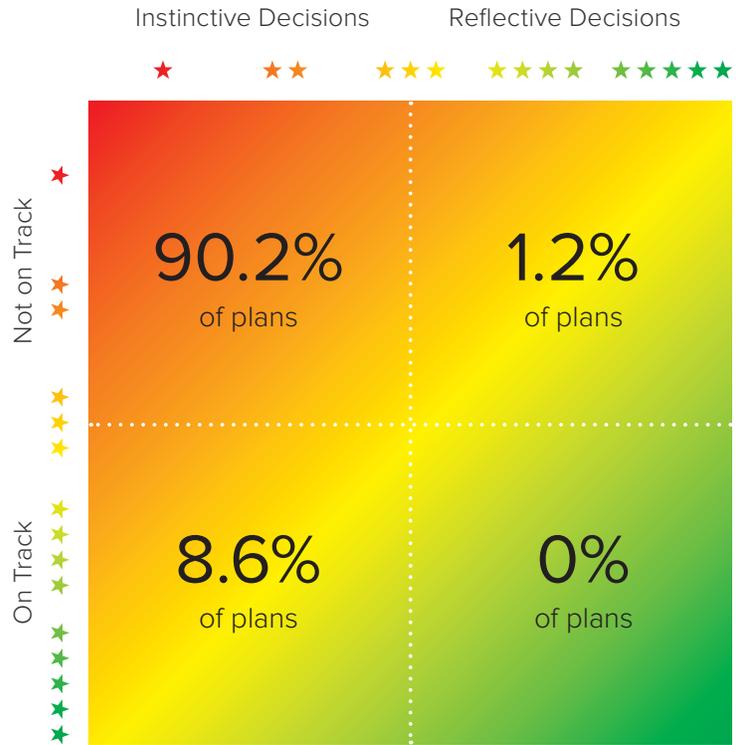
⁶ Benartzi, Shlomo, with Jonah Lehrer, "The Smarter Screen: Surprising Ways to Influence and Improve Online Behavior," Penguin, 2015.

⁷ Frederick, Shane. "Cognitive reflection and decision making." *The Journal of Economic Perspectives* 19.4 (2005): 25-42.

Thomson, Keela S., and Daniel M. Oppenheimer. "Investigating an alternate form of the cognitive reflection test." *Judgment and Decision Making* 11.1 (2016): 99.

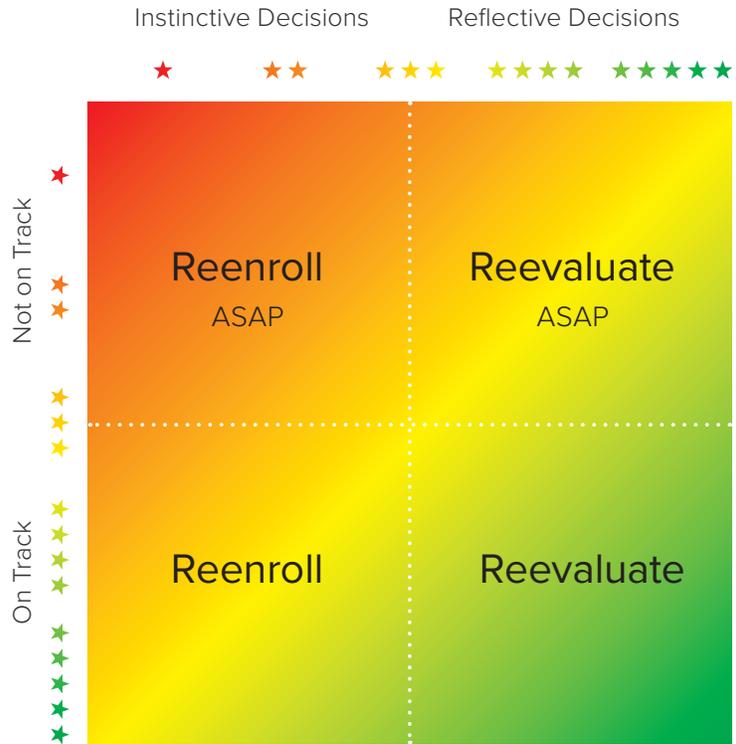
⁸ If we lower the bar from two to one and a half reflective indicators, then six out of ten plans suffer from instinctive decision making and poor retirement outcomes, and three percent are reflective with good retirement outcomes.

Figure 4: The Reflection Index and Retirement Outcomes by Plan



Source: Voya data from 428 plans with more than 25 participants. Participants with an annual salary below \$20,000 or projected income replacement above 200 percent were excluded. Plans with an average Reflection Index below/above 2.0 are categorized as "Instinctive Decisions" / "Reflective Decisions." And, plans with an average income replacement below/above 70 percent are categorized as "Not on Track" / "On Track."

Figure 5: The Retirement Check-Up Call to Action



Course Corrections

To demonstrate the application of the plan check-up approach, let's consider two representative case studies, featuring participants with very different decision-making styles and outcomes. (While these case studies are done at the individual level — I want to bring the different decision-making styles to life — it's worth repeating that the retirement check-up process assesses the thinking style and projected outcomes of plans, not individual participants.) On the one extreme, I consider participants who made an instinctive decision and suffer from a significant retirement shortfall. On the other extreme, I consider participants who made a reflective decision and are on track to reach their financial goals.

Case #1: Instinctive Decision

This plan participant was automatically enrolled four years ago, but opted out. He visited the retirement website on a mobile device at 2 AM and spent less than five seconds on the site. Before opting out, he didn't gather any additional information or adjust the default savings rate to explore its impact on his projected retirement income. As a result, his projected retirement income consists of just Social Security benefits. In addition, he has never returned to the retirement website since the initial opt-out to reconsider his decision. To simplify things, let's further assume that most employees in the plan made similar instinctive decisions, and that most suffer from poor retirement outcomes. What can the plan sponsor do to fix the situation and improve retirement outcomes?

The solution is based on the powerful impact of defaults, as demonstrated in the work of Madrian and Shea and subsequent studies. In one plan studied by Madrian and Shea, participation rates under the opt-in approach were barely 20 percent after three months of employment, gradually increasing to 65 percent after 36 months of employment. However, when automatic enrollment was adopted, enrollment of new employees jumped to 90 percent immediately and increased to more than 98 percent within 36 months.⁹ Automatic enrollment thus has two effects: participants join sooner, and more participants join the plan over time.

Defaults can also be used to help people who are already saving for retirement save even more. In the *Save More Tomorrow™* program developed by Benartzi and Thaler, employees are invited to commit to increased contribution rates after future pay raises.¹⁰ (Once they commit, the increased contributions become the default, requiring an opt-out.) While employees can always change their minds and stop the saving increases, Benartzi and Thaler found that most employees in the program stick to the default increases, and thus see a dramatic change in their deferral rates. In the first implementation of the program in 1998, deferral rates for program participants almost quadrupled from 3.5 to 13.6 percent. In a follow up study, we estimated that about four million Americans had been participating in the Save More Tomorrow program, or similar automatic saving increases programs, by 2011.¹¹ While helping four million Americans save more is a great start, there are millions of more workers who can use the help of defaults to

⁹Madrian, Brigitte C., and Dennis F. Shea, "The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior," *Quarterly Journal of Economics*, 2001, 116(4): 1149–1525

¹⁰Thaler, Richard H., and Shlomo Benartzi. "Save more tomorrow": Using behavioral economics to increase employee saving." *Journal of Political Economy*, 2004, 112.S1: S164-S187.

¹¹Benartzi, Shlomo, and Richard H. Thaler, "Behavioral Economics and the Retirement Savings Crisis," *Science*, March 8, 2013, Vol. 339, pp. 1152 – 1153.

improve their retirement outcomes.

One of the primary reasons defaults can be such powerful nudges is that engaging the reflective system requires mental effort. And because thinking is hard work – the prospect of difficult and complex choices leads many people to choose not to choose – procrastination is the path of least resistance, even if it comes with negative consequences in the future. By aligning the default with a stated goal – the vast majority of Americans want to save more for retirement¹² – we can make it far easier for people to do the right thing, even if they decide instinctively (or fail to decide).

Taking the extensive research on defaults into account, plans characterized by an instinctive decision-making style and poor retirement prospects should implement re-enrollment *as soon as possible*. This automatic re-enrollment will help participants within these plans achieve a successful retirement journey by (1) enrolling those not in the plan, (2) boosting the savings rate of those who are not saving a sufficient amount, and (3) placing people in an appropriate well-diversified investment solution. Because these plans are characterized by a suboptimal decision-making process among participants, and are suffering from bad retirement outcomes, a course correction should be implemented immediately. (See Figure 5, summarizing the recommendations by decision style and retirement preparedness.) Furthermore, if the plan committee is not scheduled to convene for many months, then the sponsor might want to hold a special meeting sooner to design the re-enrollment process. The design of the process should also include the frequency of re-enrollments, as some participants can benefit from multiple future interventions. In the United Kingdom, for instance, it is mandatory to re-enroll participants every three years.

Of course, if the participants within a plan have a less dire financial situation, even if they still relied on an instinctive decision-making approach, the committee should feel less pressure to act right away. For instance, employees might have made an instinctive decision to save just five percent in a very high risk portfolio. In recent years, their investment returns have been extraordinarily high. In this case,

employees might still be on track because they were simply lucky. But luck doesn't last forever: in the future, these extremely high risk investments could also result in large losses. This means that a course correction at the plan level is still needed, but it might be acceptable to wait several months for the next scheduled committee meeting. In short, it is the size of the retirement shortfall that should influence the urgency of the plan committee meeting and the timing of the re-enrollment process. While all plans characterized by an instinctive decision-making style should be re-enrolled, committees can determine the timing of their intervention based on the size of the gap between projected retirement income and the retirement goal.

The larger lesson is that re-enrollment is an ideal solution for plans characterized by an instinctive decision-making process. By making it easier for their participants to make the right decision, we can offer them another chance at a successful retirement.

Case #2: Reflective Decision

This plan participant opted into the plan thirty years ago, before the digital age and online enrollment. As a result, we have no data dating that far back on his attention. However, his decisions suggest a reflective decision-making process, as he chose a 12 percent savings rate and customized his portfolio allocation, putting 65 percent of his account into an active large cap stock fund and 35 percent in a money market fund.

Given his double-digit savings rate, employer match and a balanced portfolio, he is on track for a successful retirement. However, the plan participant has not engaged much with the plan in the ensuing years, nor has he reevaluated the original plan elections. The participant logs into the account about once a year, perhaps around the time of the annual statements, then clicks to learn more about how the projected retirement income been calculated, but logs out within a minute or two. (Even reflective decision-makers are subject to cognitive laziness and the pull of inertia.) Since the stock fund outperformed the money market fund by a huge margin over the last thirty years, his portfolio is now

¹²Choi, 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.

roughly 85 percent in stocks and is due for a rebalancing. In addition, the employer's plan now offers both new target date funds and managed account services that can ensure proper diversification going forward. To simplify things, let's further assume that participants in this plan have generally made reflective decisions and have good retirement prospects.

Because these participants used a reflective thought process during enrollment, defaulting the participant to a new savings rate or portfolio might be too intrusive, as participants have already stated their preferences. Nevertheless, thoughtful decisions made thirty years ago are most likely outdated. Of course, the more outdated the decisions are, the more important it is to intervene. The question, of course, is what this intervention should involve, especially if re-enrollment feels too intrusive.

Plans characterized by a reflective decision-making process should nudge their participants to *re-evaluate* their elections. One possible method for encouraging re-evaluation is with a personalized outreach campaign, be it via call centers, emails or videos.¹³ These campaigns would begin by outlining the particular problems with the participant's account, whether it's a low savings rate or an undiversified portfolio. In addition, a campaign reaching out to participants dealing with diversification issues could outline the advantages of new investment options, such as target date funds or managed account services that adjust the risk to fit a participant's age. The campaigns, however, should go beyond just providing information and make the information as actionable as possible. For example, if the campaign is delivered via email, then the email should feature a clear call-to-action (CTA) and a link to the plan website that makes saving more and saving smarter extremely easy to implement.

The urgency of re-evaluation – and the speed with which the plan committee should act - depends on two variables. The first variable is the financial situation of the typical participant within a given plan, and whether or not they are on track to have sufficient income in retirement. Bigger retirement shortfalls call for quicker action.

The second variable to consider, as mentioned above, is when participants, on average, last revisited their retirement decisions. If participants have not adjusted their savings rate or portfolio since their initial enrollment decision, or in several years, then the entire plan should proceed with re-evaluation on a faster schedule. However, if the typical participant has recently visited the enrollment website to gather more information or alter their savings choices, then the plan committee has more time to consider a re-evaluation campaign.

The goal of re-evaluation is to ensure that even plans characterized by a reflective decision-making are still offering tools for improving retirement outcomes. Just because participants in such plans considered their alternatives a long time ago doesn't mean they chose the best one for the long-term. And even participants who have done well still deserve an opportunity to do better.

¹³ Benartzi, Shlomo with Jonah Lehrer. *The Smarter Screen*. New York: Penguin, 2015. P. 138-161.

Summary

By taking the decision-making style and retirement outcomes of plan participants into account when conducting a plan check-up, we can design interventions capable of significantly improving retirement outcomes. As our data demonstrates, such improvements are urgently needed. The initial decision about enrolling and choosing how much to save should not be the end of the retirement journey. Rather, it should be seen as merely the first step. By offering plan participants the opportunity to adjust their financial course, we can ensure they are able to stay on path toward a successful retirement.

Appendix: Counter Arguments

Below are the key objections plan sponsors and their advisors may express with respect to re-enrollment.

1. Most sponsors do not currently re-enroll. It doesn't have to be this way – we can design a better retirement journey. In the United Kingdom, for instance, re-enrollment is mandatory every three years. While there is no such requirement in the United States, plan sponsors are allowed to re-enroll participants as part of their fiduciary responsibility.¹⁴ And, I believe that more frequent re-enrollments can improve retirement outcomes.

2. Re-enrollment can take a long time to execute. This is precisely why the process should begin immediately, especially if there is a large gap between projected retirement income and the retirement goal. Advisors and retirement providers can work with plan sponsors to help them make the re-enrollment process as easy and efficient as possible.

3. Re-enrollment into the provider's QDIA product could boost its profits. The plan sponsor can pick any qualified default investment alternative (QDIA) they feel is most appropriate for their employees.

4. A higher default savings rate will boost the cost of the employer match. By optimizing the match formula, it's possible to increase the savings rate without significantly increasing match cost. The general principle is to lower the match rate and increase the match cap.¹⁵

5. Some people make decisions and gather information offline. Although we are currently focused on digital analytics, future versions will also include data from call centers and other offline resources.

6. Not all participants within a plan use the same decision-making style. As we note in the paper, measuring the decision-making process at the individual level is an extremely difficult task and will likely require challenging amounts of data. We believe that assessing decision-making style at the plan level provides the best way to design an effective solution for the plan, which is what the check-up process is all about.

7. The re-enrollment process is too pushy, especially for those on track. While some people might conclude that re-enrollment is too aggressive for plans that are on a successful path, others might argue that re-evaluation isn't aggressive enough for plans that are headed for bad outcomes. If a plan sponsor is not comfortable with a given approach, it's easy to revise the behavioral remedy accordingly. The key point is that the vast majority of plans have both a bad outcome and bad process, and will benefit from immediate re-enrollment.

¹⁴ See, for instance, a 2016 Voya whitepaper: "A Blueprint for Retirement Success: Five Strategies for Mitigating Fiduciary Risk and Enhancing Employee Readiness Through Workplace Savings."

¹⁵ In *Save More Tomorrow*, I outline techniques for restructuring the match formula so it doesn't cost more to get employees to save more. See Benartzi, Shlomo with Roger Lewin, *Save More Tomorrow*, New York: Penguin, 2012, pp. 57 - 65.

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