



THE **MORE** DESIGN

Integrating psychological science and behavioral economics to engineer better outcomes with human resource, benefits and retirement programs.

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FOREWORD

“Life expectancy is ballooning just as science and technology are on the cusp of solving many of the practical problems of aging. What if we could not only have added years but spend them being physically fit, mentally sharp, functionally independent and financially secure? At that point, we no longer have a story about old age. We have a story about long life.”

PROFESSOR LAURA CARSTENSEN
FOUNDING DIRECTOR, STANFORD CENTER ON LONGEVITY

To achieve the ambitious goals outlined by Carstensen, significant behavioral issues need to be addressed and modified. Research has identified numerous actions that increase the odds of a long, prosperous life, but many people don't take the appropriate steps, particularly in the areas of health and financial security. As a result, individuals aren't achieving the full potential of their lives, which creates substantial costs for both the individual and society.

To address these challenges, this paper integrates the robust research on psychological science, behavior change and decision-making with recent research on various behavioral economics phenomena in order to improve health and financial security. Even though social science has deepened the understanding of the basic principles that govern behavior, organizing and integrating these findings in a manner that can be readily used by human resource and financial practitioners is the next step to improve outcomes.

This paper proposes the MORE Design, which organizes various findings from psychological science and behavioral economics for use by practitioners when designing and communicating retirement and employee benefit plans. As an analogy, engineers integrate various principles from the sciences, such as physics and chemistry, to build automobiles and other manufactured products. Our aim is to synthesize empirical evidence about behavior for practitioners so they can improve the financial well-being and health of employees, members and customers.

Our primary goal is to provide guidance for employers, non-profit organizations, consultants, advisers and businesses when designing retirement and benefits programs that require behavior change and decision-making. Our secondary goal is to suggest future research directions that can improve the effectiveness of intervention programs through partnerships between academia and the private sector.

This paper is the first in a series on evidence-based behavioral interventions. As the inaugural paper, it will outline the MORE Design and delve into each stage of the model by:

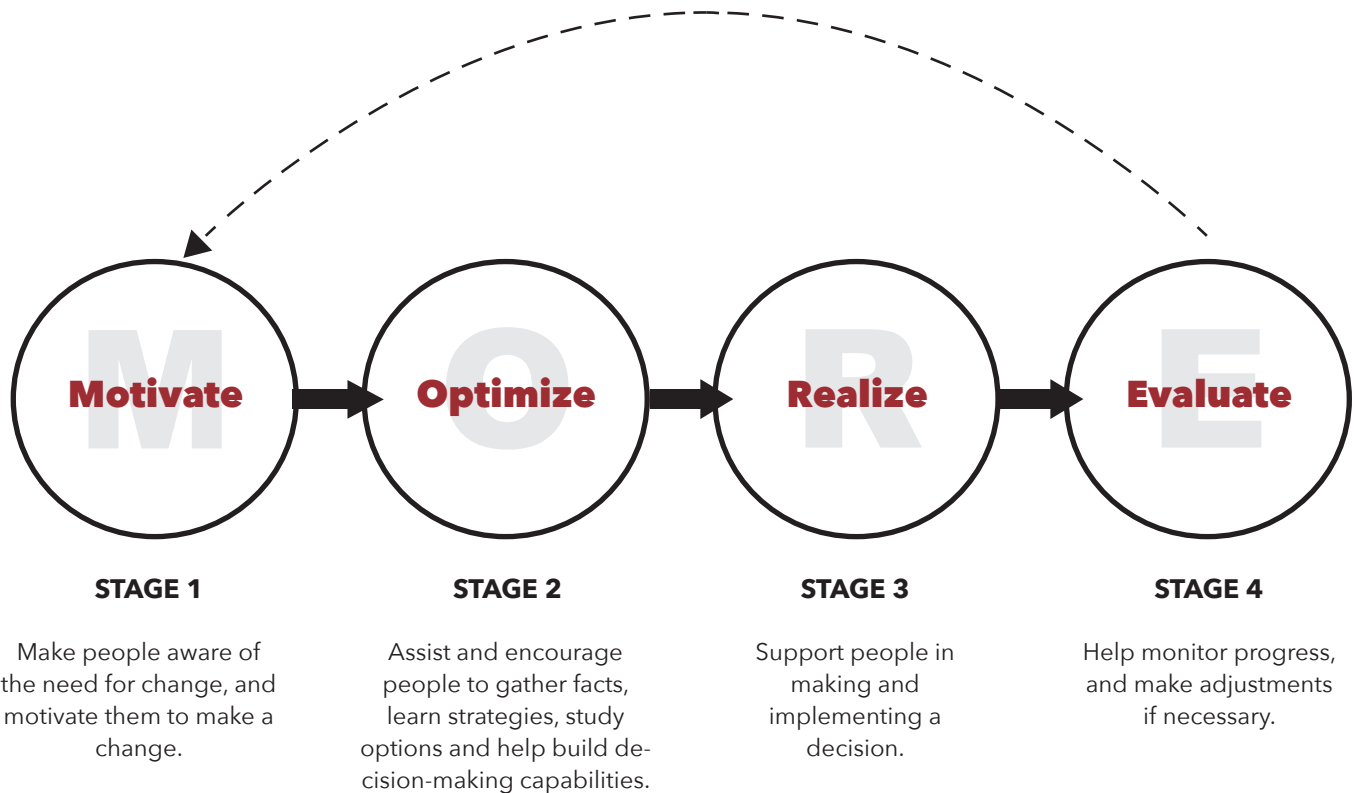
- Defining the relevant biases and psychological factors that influence behavior in that stage,
- Describing how employers can address these biases through applying behavioral economics and psychological science principles, and
- Explaining how the stage incorporates elements of other behavior change and decision-making models.

ORGANIZING AND INTEGRATING ARE THE NEXT STEPS

Unrealistic Optimism
Temporal Discounting
Anchoring Effect Decision Fatigue
Illusion of Control Status Quo Bias
Default Heuristic Consumerism
Confirmation Bias Overconfidence Inertia
Affect Heuristic Social Norms
Stories Disposition Effect
Serial Position Effect Loss Aversion
Credit Card Effect Planning Fallacy
Choice Overload Endorsement Effect
Framing Effect

The paper will then discuss how to tailor the MORE Design to different groups and conclude with a call for partnerships between academia and the private sector as a way to strengthen research into effective behavioral interventions.

A companion paper titled *The Science Behind the MORE Design* provides details on the behavior change models that underlie the MORE Design, and also provides a compendium of behavioral economics and psychological science factors that can serve as a reference for practitioners.



NOTES

1. This paper uses the term “behavioral economics,” though other researchers may use the term “behavioral finance” to describe similar concepts. In the context of this paper, we have focused on the psychological factors that influence behavior change and decision-making.
2. This paper uses the term “employer” and “plan sponsor” interchangeably.
3. Some of the examples used in this paper refer to retirement planning and the design of retirement programs, while other examples apply to health care plans. These examples are intended to illustrate the general concepts behind the MORE Design; it is not the intent of this paper to be an exhaustive treatment of the use of behavioral economics and psychological science principles for retirement or health care plan design. These topics may be the focus of future papers.

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EXECUTIVE SUMMARY

The Stanford Center on Longevity (SCL) envisions a society that celebrates and promotes long lives that are productive and engaging in order to address the challenges of an aging society. Individual financial security and sustained physical health are two key components of this vision, yet these goals remain elusive for much of the U.S. population. Although many people know how they should act to improve their financial security and health, they often struggle to implement the requisite behaviors.

For example, saving money for retirement has become inarguably more important than ever due to increases in longevity, health care expenses and the prevalence of defined contribution (DC) plans. But most people fail to save adequately for the longer life spans they experience in retirement. The 2017 Retirement Confidence Survey, administered by the Employee Benefit Research Institute (EBRI), found that over half (53 percent) of workers age 55 or older reported that they or their spouse had saved less than \$100,000 for retirement (excluding homes and defined benefit plans), an amount that will be inadequate for many workers.

Sub-optimal behaviors are equally apparent in the domain of health. Despite widespread knowledge about the consequences of unhealthy behavior, people continue to make poor choices regarding nutrition, exercise, smoking, substance abuse and other maladaptive lifestyles. The Center for Disease Control reports that the cost of treating heart disease and stroke in the United States, both of which are strongly linked to lifestyle choices regarding diet and nutrition, is \$312.6 billion and rising (“Heart Disease: Frequently Asked Questions (FAQs),” 2014). This is just one of many examples showing that unhealthy behaviors not only hurt the welfare of individuals but also engender substantial financial consequences for all of society.

To address these behavioral issues, employers and plan sponsors can adopt a range of responses. A common approach regarding the design of employee benefit and retirement plans has valued freedom and flexibility, providing employees with education and tools to help them make appropriate decisions. However, evidence is accumulating that such an approach works well for only a relatively small percentage of the population who understand the information presented and act on this knowledge (Retirement Confidence Survey, 2017; National Retirement Risk Index, 2016; 16th Annual Transamerica Retirement Survey, 2015). For complex decisions that are beyond the understanding or interest of many employees, such as retirement planning, employers have the option to make decisions for employees through the structure of the program. Indeed, this was an important advantage of traditional defined benefit (DB) retirement plans. In



recent years, employers have moved away from this paternalistic approach, though it remains an option for employers to consider, even within a DC retirement plan.

An emerging approach is to continue to provide employees the freedom, flexibility and tools to make their own decisions regarding health and financial security but have the plan sponsor influence and enhance employees' decisions through the program's design and communications. For employers and plan sponsors that prefer this approach, SCL proposes the MORE Design, which integrates behavior change models and the latest research in behavioral economics and psychological science. The MORE Design will help practitioners create employee programs that are based on the principle of behavioral nudges (Thaler and Sunstein, 2008) or "guiding design"—the idea that employee benefit and retirement plans and related tools should be structured in a way that guides employees to engage in healthy or optimal behavior but does not mandate it.

The MORE Design applies to both behavior change and decision-making, which are distinct but overlapping concepts. Decisions are frequently discrete, one-time events, and some may be irreversible, such as the decision to start receiving Social Security benefits. In contrast, behavior change often takes place across a series of events, such as taking steps to develop a retirement savings strategy. Behavior change usually requires ongoing monitoring to ensure that the new behavior (for example, saving more) continues and individuals do not return to old patterns (for example, spending more).

The MORE Design identifies four steps that underlie successful behavior change and decision-making:



WHY USE PSYCHOLOGICAL SCIENCE AND BEHAVIORAL ECONOMICS?

Before providing details on the MORE Design, it's important to understand why SCL advocates a behavioral economics approach to human resource programs and benefit plan design, communication and administration.

Research suggests there is a gap between the actions people say they will take or want to take vs. the steps that they actually take. For example, a recent survey conducted by the Stanford Center on Longevity and Hart Research Associates ("The Sightlines Project," 2016) shows that small percentages of U.S. citizens report they are "already doing well" in key financial and health domains: eating healthy foods (25 percent), getting regular exercise (24 percent), being financially secure (20 percent) and avoiding unhealthy foods (18 percent). Yet high percentages report being "very concerned" or "fairly concerned" about staying healthy and avoiding serious illness (61 percent) and running out of money (56 percent).

To address this phenomenon, there are three general strategies that an employer could adopt to improve financial and health outcomes. First is education. Yet the conventional approach, education alone, does not currently appear to be successful in producing broad-based improvements in employee saving or health behavior.

A second alternative, mandated programs such as a DB or DC pension plan, might increase employees' financial security but would limit their autonomy, which many employers appear reluctant to do. Furthermore, mandated programs for improving health outcomes and other human resource programs can be particularly difficult to implement.

The third approach, using behavioral economics and guiding design principles, provides several strengths that these alternatives do not. Most notably, these principles better align with how people actually make decisions.

In the following sections, we discuss these considerations in more detail.



A. EDUCATIONAL PROGRAMS

The widespread shift from DB to DC plans places more responsibility on the individual to prepare for retirement. This is problematic for employees who don't have the time, interest or ability to gain the necessary financial literacy or don't recognize the importance of long-term planning. They may not recognize the importance of participating in a DC plan or may be incapable of determining a sufficient savings rate. Unfortunately, research has repeatedly found that many Americans, including older adults, lack basic financial knowledge (Lusardi, 2008), indicating that many people may not be sufficiently prepared to effectively utilize DC and other retirement plans effectively.

To address this dilemma, many employers, especially large organizations, offer financial education programs or seminars to educate their employees on basic financial literacy, and particularly saving for retirement. Many of these programs appear to have positive effects. On post-seminar surveys, many attendees report that they've developed or revised their retirement goals, including how much money to save and when they plan to retire. These effects are especially strong for employees at the bottom of the wealth distribution scale and those with low education. In these groups, one study showed that attending financial seminars appeared to have the effect of increasing their financial wealth (their retirement savings, excluding housing and business equity) by an average of approximately 18 percent (Lusardi, 2008); unfortunately, even these considerable gains may not be sufficient for some employees to achieve retirement security.

Some research suggests that financial education programs may primarily change people's *intentions* about retirement planning rather than their actual behavior. An analysis of several financial education seminars offered by TIAA-CREF found that roughly 30 percent of attendees had raised their desired level of retirement income at the end of the seminar. However, in a follow-up survey a few months later, many of these attendees hadn't actually implemented this change, despite having reported a strong intention to do so (Clark and d'Ambrosio, 2008). This suggests that many employees fail to act on their intentions, or they may simply be reporting strong intentions to change because the situation makes this the desirable response.

In addition, evidence suggests that many people will simply not be able to “do the math” no matter how much financial literacy education they receive. This is because many Americans lack basic mathematical abilities or “numeracy,” which is akin to literacy for numbers (Lipkus, Samsa and Rimer, 2001). Even individuals with a basic level of financial literacy may still fail to understand all the complexities of retirement planning. Another shortfall is that educational programs rely solely on facts and figures to induce behavior change, but research suggests that emotional appeals are just as, if not more, important (Heath and Heath, 2010).

Education alone may not be sufficient to improve retirement or health outcomes. Saving for retirement isn't just an educational issue but is also a behavioral issue.

B. MANDATED PROGRAMS SUCH AS DC PENSIONS

One straightforward way for employers to ensure that their employees save money for retirement is to make participation and contributions to DC plans mandatory—i.e., a condition of employment. Under such a plan, a significant percentage of each employee's paycheck would be automatically transferred into a DC plan and employees would be unable to stop this process as long as they are employed by that employer. In other words, employers would essentially force their employees to save money. The employer's contribution would also be defined by a formula. Upon retirement, the plan would specify the method for converting savings into retirement income.



One example is the TIAA-CREF system of DC plans that was prevalent in the last half of the 20th century at many universities for their faculty. These plans mandated high employee contribution amounts and annuitization upon retirement to generate a lifetime income.

At the outset, DC pension plans address two key problems of the current administrative practice of DC plans: (1) employees not saving enough and (2) employees having difficulty with both learning how to generate retirement income and having the discipline to implement such plans. However, even with a mandatory DC pension plan, there are still a number of issues that employers need to consider, such as how to set the mandatory contribution rate and how to communicate this policy to their employees. One downside of employer-mandated DC plans is that employees may view the mandatory contribution level as social norm or an endorsement of the correct amount to save for retirement and refrain from saving additional funds, even when it would serve their interests. If employers set the mandatory contribution rate too low, employees may still arrive at retirement with insufficient savings.

Further, it's not clear whether large numbers of employers would feel comfortable forcing their employees to save money and dictating the methods to convert savings into income upon retirement. Ultimately, DC pensions require employers to make a trade-off between employee autonomy and financial security, and some employers may decide that these programs are too paternalistic, or they fear a backlash from employees who oppose such controls over their income.

Despite these misgivings, a few employers have initiated and operated such a mandatory retirement program. Employers that adopt DC pensions value the ultimate goal of delivering adequate retirement income above other goals, such as autonomy and freedom of choice. They prioritize the good of the group over individual choice and agency over investments. This practice becomes suboptimal in cases where individuals might have invested better on their own, even though the plan provided adequate benefits to the overall population.

C. PSYCHOLOGICAL SCIENCE AND BEHAVIORAL ECONOMICS

Systematically applying psychological science and behavioral economics principles to retirement savings programs offers several advantages that pure financial education campaigns and mandated programs do not. First, behavioral economics can minimize the cognitive or educational demands that may “overload” some people and get in the way of behavior change. Educational programs rely on employees to understand, remember and adhere to the advice presented, which can burden the individual with a large—even overwhelming—cognitive load. In contrast, it may be possible to guide employees to the appropriate behaviors and/or decisions without placing significant demands on personal resources (cognitive or otherwise). Second, a behavioral economics approach encourages more effective choices by *nudging* or *guiding* individuals towards the desired behaviors while still granting the freedom to act as they choose. While employees may react negatively to mandatory programs that require certain outcomes, they can act freely under a behavioral economics approach.

Moreover, a behavioral economics approach can address how people actually make decisions and behave. Conventional economic theory posits that people are rational in that they always choose their most preferred option given the information they have at the time of choice. Therefore, one natural way to change outcomes according to standard economic theory is to give people more information (e.g. enroll employees in a financial education program). The theory, however, doesn't take into account the fact that people may have a hard time identifying what their most preferred option is (even in situations in which they have complete information) and choosing it once they've identified it.

People's ability to make truly rational decisions is constrained by a variety of cognitive limitations.

Behavioral economics recognizes the many “quirks” of human cognition, motivation and decision-making that contradict rational choice theory (for a review, see Kahneman, 2003). In practice, people's ability to make truly rational decisions is constrained by a variety of cognitive limitations, including restrictions on memory, awareness, self-control and self-interest. While these limitations pull people away from the decision-making capabilities of a rational actor, they often do so in predictable and systematic ways that can be leveraged to effect positive behavior change.

Additionally, emotions play a significant role in guiding behavior and decision-making; people are often pulled one way by their emotional side (which we can think of as an elephant) and another way by their rational side (the rider who attempts to direct and manage the at times unwieldy elephant) (Heath and Heath, 2010). Behavioral economics acknowledges this reality by incorporating psychological biases, heuristics and “quirks” motivated by emotions into behavior change and decision-making programs, and by complementing rational arguments with emotional messaging.

Still, despite the many benefits of applying behavioral economics to programs, there are a few caveats. They require more effort from plan sponsors than a mandated program, such as a DC pension plan. Also, the risk remains that some employees will not make optimal decisions for long-term financial security, such as saving enough— or anything—for retirement.

As a result, plan sponsors must prioritize their goals with respect to freedom of choice and retirement outcomes. For retirement plan designs, employers that prioritize adequacy of benefits may wish to implement a DC pension plan, while employers that value freedom of choice may decide that using behavioral economics principles is a better fit. In order to address both of these goals, plan sponsors might want to adopt hybrid solutions that combine these two approaches, offering a mandated program that delivers a basic level of financial security to all participants, with a voluntary supplemental savings program that utilizes behavioral economics principles to guide employees to improve their retirement security.

D. RATIONALIZING THE MORE DESIGN FOR RETIREMENT PLANS

To elaborate on the above issues, the remainder of this section discusses the rationale for using the MORE Design when designing and communicating defined contribution retirement plans to workers.

Several studies conclude that many American workers have not saved sufficient amounts for a comfortable retirement, percentages ranging from 50 percent or more (Retirement Confidence Survey, 2017; National Retirement Risk Index, 2016; 16th Annual Transamerica Retirement Survey, 2015).

Conventional economic wisdom assumes that the low amount of retirement savings that Americans have set aside stems from a lack of information among workers, and most of the interventions so far have focused on retirement education and financial literacy. A few recent surveys indicate, however, that many workers know they should be saving more for retirement, but many express regret that they should have saved more (The Retirement Countdown, 2016; American Century Survey, 2015; TIAA-CREF Ready to Retire Survey, 2014). The percentages of workers expressing this regret range from 50 percent to 90 percent, depending on the survey.

Based on these results and recent research in psychology and behavioral economics, we believe that education is not sufficient to increase retirement savings; in particular, we believe that:

- Even if people are aware that they should save for retirement (i.e. are given the information), the choice environment may be too complex for them to evaluate options appropriately and choose their most preferred option (e.g. due to choice overload or cognitive load).
- Even if people have successfully navigated the choice environment, people may not be able to operationalize their choice (e.g. due to time inconsistency or inertia).
- Even if people have figured out the choice environment and have operationalized their choice, they may not be able to evaluate their performance (e.g. due to lack of ability and time to assess their circumstances).

Therefore, we believe that an effective retirement program should:

- Inspire people to save for retirement and effectively deploy their resources in retirement (Motivate)
- Help people navigate the complex choice landscape by providing heuristics, checklists, strategies and tools (Optimize)
- Help people operationalize the choice they made by removing barriers to implementing their choices (Realize)
- Help people monitor their progress and evaluate their strategy, and make adjustments as necessary (Evaluate)

At every step, combining facts and strategies with emotional encouragement, support and messaging will produce the best outcomes. As a result, we propose the MORE Design for plan sponsors and financial institutions to consider when designing and communicating retirement programs.

Most American workers have not saved sufficient amounts for a comfortable retirement. Based on research results, we believe that education alone is not sufficient to change that.

We believe that the MORE Design can be used in contexts in addition to retirement plan design and communication. In the following section, we discuss the development of the MORE Design that organizes and integrates various psychological science and behavioral economics principles.

THE MORE DESIGN

Employers and other institutions that are uncomfortable with mandated programs yet also unsatisfied with the results of pure educational programs can apply insights from behavioral economics and psychological science to design programs that improve retirement and health outcomes. The MORE Design may aid plan sponsors to improve employee decision-making and promote sustainable behavior change.

A. OVERVIEW OF THE MORE DESIGN

The MORE Design provides a framework for designers of human resource programs and retirement and benefit plans based on the principles of “guiding design.” The MORE Design helps employers design plans that guide, nudge or encourage employees to engage in healthy behavior, rather than compel them to do so.

The structure of the MORE Design is based on Prochaska’s Stages of Change Model, which describes the steps that a person goes through in order to alter an unhealthy behavior, such as smoking or overeating. The MORE Design also synthesizes and incorporates elements from leading theoretical models of decision-making and behavior change, such as Bandura’s Social Cognitive Theory, Ajzen’s Theory of Planned Behavior and Heaths’ Behavior Change Framework (for a description of each model, please see the companion paper *The Science Behind the MORE Design*).

Similar to the Stages of Change Model, the MORE Design identifies stages of behavior change and decision-making. Practitioners are encouraged to guide their employees through these stages in order to effectively change their behavior or help them make informed decisions. In this way, the MORE Design recognizes that behavior change and decision-making are part of a process that presents numerous challenges and opportunities over time. While the implication is that employees will progress through the stages sequentially, in reality, some employees may skip a stage, while others may move back and forth between stages before making progress.

The MORE Design is not intended to be another theoretical model that describes behavior change and decision-making. Rather, it is a construct that will help practitioners use psychological science and behavior economics to engineer better outcomes with retirement and benefits programs.

The MORE Design combines positive emotional messaging with logical facts and figures at each stage, recognizing that positive reinforcement is a critical complement to purely educational efforts or messages that might appear to be punishment.

B. STAGES OF THE MORE DESIGN

STAGE 1 Motivate. Make people aware of the need for change and motivate them to make a change.

STAGE 2 Optimize. Assist and encourage people to gather facts, learn strategies, study options and help build decision-making capabilities.

STAGE 3 Realize. Support people in making and implementing a decision.

STAGE 4 Evaluate. Help monitor progress and make adjustments if necessary.

At each of the first three stages (motivate, optimize and realize), practitioners must address psychological biases and heuristics, and employ both rational and emotional approaches to encourage employees to move to the next stage. A successful program may need to repeat the key messages in a variety of ways, recognizing that many employees may need to hear the messages repeatedly and through different modalities before they will understand and incorporate the key themes into their decisions. The final stage (evaluate) acknowledges that behavior change can be difficult and may not “stick” the first time; employees often need support to monitor and maintain their healthy behavior.

In the following sections, we provide details of each stage of the MORE Design.

MORE STAGE 1: MOTIVATE

The first step in the MORE Design is to make a person aware that an important decision must be made. Sometimes this task is relatively straightforward; the negative consequences of some behaviors, such as excessive spending, are indisputable and generally well-known. Other times, however, people may be unaware that they are engaging in problematic behaviors, and employers and plan designers must raise their awareness. For example, only 41 percent of workers have tried to calculate how much money they'll need in retirement, which means many people may not know if they are saving too little (Retirement Confidence Survey, 2017).



RELEVANT BIASES AND STRATEGIES

- Affect Heuristic
- Unrealistic Optimism
- Framing
- Loss Aversion
- Stories

Once people are aware of the problems or the need for a decision, they must be motivated to take action. People may not be motivated to change their behavior if they believe they lack the requisite skills or abilities to do so or if they feel that the situation is out of their control. Furthermore, people have a tendency to stick with the status quo and often need some kind of impetus to overcome their inertia and induce them to change. As a result, employers and plan designers should develop programs and campaigns that address these barriers and motivate individuals to change.

It is important to note that there are individual differences in the ways people will react to Stage 1 interventions. For instance, some people who are sufficiently motivated may prefer to bypass Stage 2 (optimize) in order to directly seek and follow the guidance of a trusted source in Stage 3 (realize). Benefit plans and intervention programs should be designed to accommodate this “do it for me” group. (See “Tailoring the MORE Design” on page 26 for more information.)

A. GOALS OF STAGE 1

- To make people aware that there is a problem or decision point
- To motivate people to want to make a change or decision

B. RELEVANT BIASES TO ADDRESS

A wide range of biases in human judgment and decision-making should be addressed in Stage 1. Listed below are some key examples (for additional information, see *The Science Behind the MORE Design*):

AFFECT HEURISTIC

- **Description:** The “affect heuristic” describes the tendency to base a decision on the emotional feelings of “badness” or “goodness” that are rapidly and automatically associated with a stimulus (Slovic et al., 2007). For example, if the word “retirement” elicits a negative feeling, or if saving feels like deprivation, then people may react by avoiding communications about retirement planning and saving. Similarly, people may have immediate negative, visceral reactions to the terms “dieting” or “exercising.”
- **How to respond:** First assess the possible sources of negative feelings people may have about retirement planning, saving, exercising or changes in eating habits; then develop strategies to counter these negative feelings. Use the affect heuristic to your advantage by employing words, images and messages that draw positive associations with



retirement planning, saving, exercising and proper nutrition. Emphasize the positive thoughts and feelings that people will experience if they pick the optimal alternative – happy, healthy, confident and prepared for the future.

UNREALISTIC OPTIMISM

- **Description:** “Unrealistic optimism” describes the tendency of people to generally believe that they’re more likely than other people to experience positive events and less likely to experience negative events (Weinstein, 1980). As a result, they may underestimate the likelihood that they will experience financial difficulties in retirement. Approximately 79 percent of current workers, for example, expect to work in retirement and thereby supplement their retirement savings. However, the actual number of retirees who report that they have worked in retirement is much lower: 29 percent (Retirement Confidence Survey, 2017). This suggests that people do not have a realistic picture of whether they will find work or have the capability or desire to work in retirement. Similarly, people may believe that the negative consequences of unhealthy behaviors such as smoking or obesity will not happen to them; they often believe these bad outcomes happen to “other people.”
- **How to respond:** Minimize unrealistic optimism by presenting people with more realistic information about their financial situations or by explaining how they could jeopardize their financial security in retirement if they do not act now. Project and compare their possible future states if they don’t take action vs. taking action to prepare for the future, and encourage them to envision the positive and negative feelings they may experience from either result. Realize, however, that unrealistic optimism may be an effective coping mechanism. Designers may want to avoid engendering a sense of hopelessness that could be de-motivating by shattering people’s confidence, subjective certainty about the future or sense of agency. Include messaging that gives people confidence that they can make a difference in their future.

C. STRATEGIES TO ADOPT

FRAMING AND LOSS AVERSION

- **Description:** Financial decisions often involve presenting or “framing” possible outcomes in either a positive way (i.e., in terms of gains) or a negative way (i.e., in terms of losses). People are particularly sensitive to losses (a phenomenon known as “loss aversion”) and are consequently more motivated to avoid a loss of a given amount than they are to seek a gain of the same amount (Kahneman and Tversky, 1979; Kahneman and Tversky, 1992).
- **How to deploy:** Frame the decision to plan for retirement as a way to avoid a potential future “loss” (the loss of financial security and freedom). Similarly, continuation of unhealthy behaviors should be framed as an action that may result in a future loss of freedom and the ability to continue pleasurable activities. Utilize the affect heuristic in messaging to emphasize the negative feelings that might be associated with the potential loss.

STORIES

- **Description:** People are more likely to remember stories than they are to recall statistics. This is because stories make information more evaluable, salient and easily imaginable. Stories also improve memory retention, and they’re more engaging than statistics (Hibbard and Peters, 2003). Consequently, stories can be more persuasive than facts and figures and often lead to more significant behavior change (Aaker, 2013).
- **How to deploy:** Incorporate stories strategically into retirement planning and/or health materials to show people what their future lives will be like if they do not act (negative stories) vs. what it could be like if they do take appropriate steps (positive stories). Evoke the power of social norms through stories: “People who are on track to prepare for retirement take these steps ...” Use the power of the affect heuristic by having the storytellers describe their positive or negative feelings about their stories.

Stories are powerful motivators for getting people to donate to charities. One study found that participants were more likely to donate money to fight hunger in Africa when they were presented with a story rather than statistical information. Specifically, participants who received the photo and story of a young African girl struggling with food insecurity were more inclined to donate money than participants who merely read statistics about hunger in Africa (Small, Loewenstein, and Slovic, 2007). By increasing participants’ emotional connection with the young girl, the story increased their motivation and prompted them to take action.

D. HOW STAGE 1 BUILDS ON OTHER MODELS

Stage 1 of the MORE Design incorporates the following components of other behavior change and decision-making models:

- *Prochaska’s Stages of Change Model:* Stage 1 synthesizes the first two stages of Prochaska’s model, precontemplation and contemplation, where a person moves from being unaware of a problem to becoming aware of it (Prochaska, DiClemente and Norcross, 1992). Both Prochaska’s model and the MORE Design consider awareness to be a necessary predicate for behavior change.
- *Bandura’s Social Cognitive Theory:* According to Social Cognitive Theory, attention is necessary for learning to occur (Bandura, 1989). Similarly, Stage 1 of the MORE Design requires awareness (a form of attention) in order for behavior change (which often necessitates learning) to occur.
- *Heaths’ Behavior Change Framework:* Heath’s Behavior Change Framework explains why it’s critical to engage people’s emotional side in order to motivate them to change their behavior (the framework refers to this as “motivating the elephant”) (Heath and Heath, 2010). Stage 1 of the MORE Design also calls for people to be motivated through emotional appeals and messaging.

See the companion paper *The Science Behind the MORE Design* for more details on these models.

MORE STAGE 2: OPTIMIZE

In this second stage, practitioners should prepare workers or customers to make decisions or implement new behaviors. To do so, practitioners should assist people with assembling their list of options by helping them collect evidence and information, solicit advice or opinions from others, test different strategies or observe others. Then practitioners should help people evaluate which option is most appropriate for them, keeping in mind that particular behaviors or paths may be more appealing depending on personal characteristics (e.g., individual traits, preferences and strengths) and situational factors (e.g., available resources, social pressure and time constraints). Last, to help people make final decisions, practitioners should design programs to raise workers' and customers' confidence in their decision-making capabilities and in their ability to implement the target behaviors. This confidence, called "self-efficacy," is crucial. Without self-efficacy, people avoid making decisions or behavior change altogether, or they put forth less effort and generate suboptimal results.



RELEVANT BIASES AND STRATEGIES

- Anchoring Effect
- Confirmation Bias
- Choice Overload
- Decision Fatigue
- Planning Fallacy
- Endorsement Effect
- Serial Position Effect
- Social Norms

A. GOALS OF STAGE 2

- To encourage people to analyze their options
- To build people's confidence in their ability to make a change or decision
- To give people the information, tools, strategies and/or heuristics that are necessary to analyze appropriate solutions and come to a decision

B. RELEVANT BIASES TO ADDRESS

Listed below are some key biases in human judgment and decision-making that should be addressed in Stage 2 (for additional information, see *The Science Behind the MORE Design*):

ANCHORING EFFECT

- **Description:** The "anchoring effect" occurs when a person consciously or unconsciously estimates a number based on a starting value (the "anchor") that is subsequently adjusted upwards or downwards. Typically, people don't adjust sufficiently upwards or downwards from the anchor, leading to an estimate that is biased towards the anchor (Kahneman, 2003). This can occur with contribution rates, investment percentages or other numbers or percentages found in retirement plans.
- **How to respond:** Assess existing anchors that may need to be corrected through messaging, such as savings rates that are too low or retirement ages that are too young. For instance, because of socioeconomic and financial shifts in the past few decades, such as reduced rates of inflation and interest rates and capital market volatility, many individuals may underestimate the age at which they are able to retire and/or overestimate the rate of returns for savings and investments. Outdated assumptions should be addressed directly. Set or reset appropriate anchors (like contribution rates) carefully and intentionally, knowing that people will use them to form their own decisions.

CONFIRMATION BIAS

- **Description:** “Confirmation bias” describes the tendency to seek and favor information that supports previously held beliefs and hypotheses (Nickerson, 1998). Moreover, individuals may be more polarized by confirmation bias when they are better educated (e.g., higher numeracy, science literacy) as this improves their capacity to seek out confirmatory information in a process called “identity-protective cognition” (Kahan et al., 2012). People are likely to seek out information that confirms their pre-existing beliefs and filter out contradictory information about nutrition, exercising, saving, investing and retirement planning in general.
- **How to respond:** Explicitly discuss confirmation bias and its potential interactions with financial planning so that people can self-assess if they are vulnerable to it. Provide stories of people who might have alternative points of view. Encourage people to seek out balanced information and evidence by providing specific avenues for them to do so.

CHOICE OVERLOAD AND DECISION FATIGUE

- **Description:** When there are too many options (“choice overload”), people have difficulty distinguishing between them and often refuse to make a selection since they cannot decide with confidence which one is best. Simply put, having many options from which to choose may be overwhelming, a phenomenon also known as “the paradox of choice” (Schwartz, 2004). This may even cause people to use undesirable heuristics, such as choosing an attribute that appears to substitute for other informational dimensions of the choice (Gigerenzer and Selten, 2002). People also suffer “decision fatigue” when they have to make too many decisions in a row; sequential decision-making reduces their willpower, making it less likely that they’ll make a choice at all (Danziger, Levav, and Avnaim-Pesso, 2011).
- **How to respond:** Manage choice overload by offering the minimum number of choices that still allows for a reasoned consideration of the trade-offs of each one (Johnson et al., 2012). The optimal number of choices will vary depending on a number of factors, including the complexity of the task, the time available to complete it and the financial sophistication and education level of the target audience. Minimize decision fatigue by structuring plans to avoid too many sequential decisions. Be mindful of the level of complexity of each piece of information in the choice process. Streamline the analytic process by offering appropriate heuristics, rules, patterns, checklists and software that help employees navigate complex decisions.

Research has shown that choice overload strongly affects participation in 401(k) plans. An analysis of actual plan data for nearly 900,000 employees from 69 industries found that the likelihood of an employee participating in a plan decreased as the number of funds offered increased. Plans that offered fewer than 10 funds had significantly higher participation rates than plans that offered more funds, whether that was 30 funds or 60 (Iyengar, Jiang, and Huberman, 2004). Employers and plan designers should keep this in mind as they select the number of funds to offer their employees.

PLANNING FALLACY

- **Description:** The “planning fallacy” describes the tendency of people to underestimate how long it will take them to complete a task, even when past experiences would suggest a longer time frame (Kahneman and Tversky, 1977). For instance, people may underestimate how long it will take them to calculate how much to save or plan for retirement.
- **How to respond:** Set the stage for making future adjustments by acknowledging that planning requires effort and providing reassurance that adjustments are normal and expected. As much as possible, design planning tools and processes that are easy and interesting. However, stress that the complexity involved with planning for the future is still not a reason for inaction. If people don’t have enough time in their schedule to properly plan, look for ways to free up their schedule and/or streamline the planning process.

C. STRATEGIES TO ADOPT

ENDORSEMENT EFFECT

- **Description:** Strictly defined, the “endorsement effect” describes the tendency of employees to interpret their employer’s default retirement plan and asset allocation as implicit investment advice (Benartzi, 2001). For example, default contribution amounts or the maximum amounts that an employer matches may be viewed as recommendations on the desired savings amount. More broadly defined, the endorsement effect also refers to the tendency to use the decisions or endorsements of specific people, including peers, siblings or experts, to cue important retirement or health decisions.
- **How to deploy:** Use the endorsement effect strategically by designing plans that “endorse” healthy behavior. Encourage people to seek out advice from trustworthy and knowledgeable individuals, such as advisers, coaches and mentors.

SERIAL POSITION EFFECT

- **Description:** When a person is learning new information, the order in which the information is presented has a strong influence on recall accuracy—this is called the “serial position effect” (for a review, see Howard & Kahana, 1999). Specifically, people are more likely to remember the first items presented (the “primacy effect”) and the most recent items presented (the “recency effect”). This can occur with any list of options presented in a retirement plan.
- **How to deploy:** Order options in a way that promotes the desired choice or behavior—e.g., start with the choice considered to be the most desirable.

SOCIAL NORMS

- **Description:** “Social norms” communicate how people typically behave (“descriptive norms”) or ought to behave (“injunctive norms”) in a given situation. Because people have a strong desire to fit in, they try to act in accordance with accepted social norms. Both descriptive and injunctive norms are more likely to motivate behavior when they are made salient (Cialdini, Reno, and Kallgren, 1990).
- **How to deploy:** Use social norms to promote desired behavior by highlighting what other people are doing (if you want employees to engage in this behavior as well) or by outlining what other people should be doing. Social norms can also be used to build confidence in one’s own efficacy (“Other people have taken the necessary steps and you can, too”).

Practitioners should prepare workers or customers to make decisions or implement new behaviors. To do so, they should assist people in assembling their list of options, help evaluate which option is most appropriate and design programs to raise workers’ and customers’ confidence.

D. HOW STAGE 2 BUILDS ON OTHER MODELS

Stage 2 of the MORE Design incorporates the following components of other behavior change and decision-making models:

- *Prochaska's Stages of Change Model:* Stage 2 is similar to the preparation stage of Prochaska's Model, where a person begins to lay the groundwork for changing their behavior (Prochaska, DiClemente and Norcross, 1992). Both Prochaska's model and the MORE Design consider self-confidence to be a necessary predicate for behavior change.
- *Bandura's Social Cognitive Theory:* According to Bandura, self-efficacy, defined as confidence in one's abilities, is necessary for learning to occur (Bandura, 1989). Similarly, Stage 2 of the MORE Design facilitates greater agency and self-efficacy in employees by optimizing choice architecture and information framing to encourage successful behavior change.
- *Ajzen's Theory of Planned Behavior:* Ajzen maintains that behavior change rests on the strength of a person's behavioral intention, or how ready someone is to perform a particular behavior. Behavioral intentions result partially from control beliefs, which describe the level of confidence that people have in their ability to change their behavior. When control beliefs are strong, people feel empowered to change their behavior. Additionally, behavioral intentions are influenced by social norms, which describe socially sanctioned behavior and influence a person's willingness to perform a behavior. People will be more willing to move from Stage 2 to Stage 3 of the MORE Design if the promoted behavior is perceived to be a social norm.
- *Heaths' Behavior Change Framework:* Heath's Behavior Change Framework explains why it's important for people to have extreme clarity about what to do when they're contemplating a tough decision or behavior change (the framework refers to this as "directing the rider") (Heath and Heath, 2010). Stage 2 of the MORE Design calls for people to find this clarity by gathering information and assessing their options, and sets the stage by ensuring that information is presented in a highly controlled fashion.



MORE STAGE 3: REALIZE

Once people have decided to change their behavior, practitioners should help them follow through with this decision and implement the new behavior. To do this, practitioners can help people overcome obstacles that they didn't anticipate or help maintain and/or reinforce their motivation along the way. Because research has found that people have a finite supply of willpower, reinforcing motivation is particularly important if the targeted behavior requires a lot of time and involves multiple steps. Additionally, practitioners should create systems, paths and environments that help to facilitate carrying out the decision or behavior. Enabling environments play a powerful role in encouraging healthy behavior.



RELEVANT BIASES AND STRATEGIES

- Consumerism and the Credit Card Effect
- Temporal Discounting
- Inertia and the Status Quo Bias
- Default Heuristic
- Make It Easy

A. GOALS OF STAGE 3

- To support people to make a decision
- To help people implement the decision as necessary

B. RELEVANT BIASES TO ADDRESS

Listed below are some key biases in human judgment and decision-making that should be addressed in Stage 3 (for additional information, see *The Science Behind the MORE Design*).

CONSUMERISM AND THE CREDIT CARD EFFECT

- **Description:** “Consumerism” refers to the significant cultural value that contemporary American society places on material goods and spending, and the encouragement of the consumption of heavily advertised products including unhealthy processed food and drink. Consumerism equates happiness and success with materialism and encourages excessive spending (Swagler, 1994). This makes saving or healthy eating increasingly difficult since these actions conflict with the predominant cultural message spread by peers and advertisers. Additionally, the societal emphasis on consumerism has led to widespread reliance on credit cards to fuel spending. Research has found that credit cards increase the likelihood, speed and magnitude of spending, a phenomenon known as the “credit card effect” (Feinberg, 1986).

Consumerism and the credit card effect may not be strict behavioral economic phenomena as defined by social science researchers, but they nevertheless represent phenomena that program designers might want to consider.

- **How to respond:** If employees spend their entire paychecks, there may be nothing left to save despite good intentions. Build the financial capability to implement decisions such as increasing savings (see the next item regarding precommitment devices for more on this). Address consumerism and the credit card effect by offering financial wellness programs that provide help with budgeting, debt management strategies and the development of good spending habits.

HYPERBOLIC DISCOUNTING

- **Description:** “Hyperbolic discounting” is a model of discounting future rewards where individuals are inconsistent in their choices across time. Standard models in economics assume that individuals discount future rewards, which means that individuals prefer to receive a good sooner rather than later. Time consistency refers to individuals’ ability to follow through with the plans they made at a certain point in time. For example, if time-consistent people decide today to exercise tomorrow, they will carry out their plan. On the other hand, if time inconsistent individuals decide today to exercise tomorrow, there is no guarantee that they will actually exercise tomorrow. It may well be the case that tomorrow they will change their mind and decide to work out the day after. Time-inconsistent individuals make choices today that their future self would prefer that they hadn’t made.
- **How to respond:** Allow employees to “pre-commit” to future increases in retirement contribution rates to help them resist the temptation in the future not to follow through on decisions they make.

INERTIA AND THE STATUS QUO BIAS

- **Description:** These two psychological factors describe a similar phenomenon: people’s strong reluctance or resistance to change. In many choice environments, people display “inertia,” or the tendency to maintain their beliefs or preferences once they’ve been formed (Madrian and Shea, 2001). Since initiating a change takes effort, people are more likely to retain their current practices and beliefs. Similarly, people have a strong tendency to remain at the pre-selected setting, or the “status quo” (Kahneman, Knetsch and Thaler, 1991).
- **How to respond:** Effectively use triggers to overcome inertia; the desired decisions or behaviors should be very clear, and it should be very obvious and easy to implement the desired change or decisions.

The power of defaults is striking when comparing countries that have “opt in” vs. “opt out” policies for organ donation. In opt-in countries, where people must actively choose to become organ donors, the percentage of consent rates is low, generally in the teens. But in opt-out countries, where organ donation is the default and people must actively choose not to become donors, the percentage of consent rates is significantly higher, generally in the nineties. Compare Germany, an opt-in country with a 12 percent consent rate to Austria, an opt-out country with a consent rate of nearly 99 percent (Johnson and Goldstein, 2003). Employers and plan designers should remember that defaults play a significant role in shaping employee behavior.



C. STRATEGIES TO ADOPT

DEFAULT HEURISTIC

- **Description:** The “default heuristic” describes the tendency for people to choose and remain with the default choice, regardless of their existing preferences (Madrian and Shea, 2001). Across many domains, people aren’t likely to deviate from the default choice that has already been selected for them.
- **How to deploy:** Take advantage of the default heuristic by setting defaults that promote healthy behavior. Automatically enroll people in retirement plans, and choose high default contribution rates. Defaults may be difficult to implement with other decisions, such as deploying resources in retirement or with nutrition and exercise decisions.

MAKE IT EASY

- Be very clear with employees about the decisions they must make, and provide concrete instructions rather than vague guidelines. For example, instead of saying “Save more for retirement,” urge people to “Increase your 401(k) contributions today by going online to the 401(k) plan website at ...” Instead of simply urging people to “Exercise more,” suggest that they start taking the stairs, walking during lunch breaks or parking the car at the far end of the parking lot.
- Provide concrete targets for changing behavior. Setting a specific savings increase goal, such as “Save 10 percent more for retirement,” may be more effective than simply telling employees to “Save more.”
- Require as few steps as possible to implement decisions.
- Minimize the time between making a decision (Stage 2) and implementing that decision (Stage 3). As time passes, motivation and knowledge decrease and it grows harder for people to act on the education they’ve received, particularly in the realm of finance (Fernandes, Lynch and Netemeyer, 2014). To minimize the decay of information or motivation, allow people to implement their decision right after the intervention.
- Identify and remove barriers to implementing decisions. For example, if people aren’t saving for retirement because they’re spending all their money, help them with budgeting their living expenses.
- Build triggers, signals and reminders to guide people to take action.

D. HOW STAGE 3 BUILDS ON OTHER MODELS

Stage 3 of the MORE Design incorporates the following components of other behavior change and decision-making models:

- *Prochaska’s Stages of Change Model:* Stage 3 is similar to the action stage of Prochaska’s model, when a person begins to actively work on changing their behavior, either by modifying their experiences, their environment, or the behavior itself (Prochaska, DiClemente and Norcross, 1992).
- *Heaths’ Behavior Change Framework:* Heath’s Behavior Change Framework calls on choice architects to “shape the path” to encourage behavior change (Heath and Heath, 2010). That is, they acknowledge that certain environments are more conducive to behavior change than others. Similarly, Stage 3 of the MORE Design instructs employers and plan designers to create plans that facilitate behavior change by making it easy for employees to make the desired changes.

MORE STAGE 4: EVALUATE

A few financial decisions are made only once, such as deciding when to start taking Social Security or pension benefits, deciding whether to take an early distribution from retirement savings and deciding what types of annuities to purchase. In these contexts, there is no need for subsequent action once the decision has been made. However, many retirement planning decisions require ongoing monitoring, such as deciding how much to save for retirement, reducing unnecessary spending, deciding how much to draw from retirement savings during retirement, deciding whether to take a loan from retirement savings and selecting investments before and during retirement.

Similarly, some health decisions are made only once, such as getting a vaccination or a knee replacement. Most health decisions regarding exercise and nutrition, however, require constant monitoring and adjustment.

After employees or customers implement changes or make decisions, practitioners should help them evaluate whether the new behaviors have the anticipated and/or intended effect. If the new behaviors don't have the intended effects or if circumstances change, help should be provided in making adjustments to achieve the desired outcomes. Given the complexity of behavior change and certain retirement planning decisions, it's not always possible to "get it right" the first time. Practitioners should help employees remain vigilant as they create new patterns, as it can be tempting to return to past habits. Additionally, employers should help employees adapt to unanticipated events. For example, after the 2008 recession, many people had to reallocate their retirement savings portfolio when the value of their investments decreased significantly. Many employees may need assistance responding to external changes that influence their retirement accounts and future planning.



RELEVANT BIASES AND STRATEGIES

- Illusion of Control
- Overconfidence
- Habituation
- Reemergence of Old Biases
- Encourage Repeating Prior Healthy Behaviors

A. GOALS OF STAGE 4

- To help people monitor progress
- To help people make adjustments if/when necessary

B. RELEVANT BIASES TO ADDRESS

Listed below are some key biases in human judgment and decision-making that should be addressed in Stage 4 (for additional information, see *The Science Behind the MORE Design*).

ILLUSION OF CONTROL

- **Description:** The "illusion of control" describes the tendency of people to overestimate the extent to which their actions can produce a given outcome and, as a result, expect a probability of success that's higher than objective probability would suggest. Notably, this occurs even in situations where chance, rather than skill, contributes significantly to the outcome. (Langer, 1975). Since retirement planning involves both skill (active planning) and chance (investment outcomes), people may fall prey to the illusion of control. For instance, people might simply assume that their 401(k) investment decisions are providing optimal returns and subsequently fail to monitor their portfolios.



- **How to respond:** Provide opportunities for adjustment when unexpected events occur or when things don't go according to plan (recall the planning fallacy discussed in Stage 2).

OVERCONFIDENCE

- **Description:** "Overconfidence" describes the tendency of people to express more confidence and certainty in their own judgments than is warranted (Klayman et al., 1999). For instance, people may be overly confident in their ability to plan for retirement and, consequently, fail to monitor or assess their decisions once they've made them.
- **How to respond:** Provide clear feedback to address overconfidence and give people a realistic assessment of their financial security. Use retirement income statements to show how current savings translate into future retirement income (Goda, Manchester and Sojourner, 2012).

HABITUATION

- **Description:** Human awareness and attention places importance on identifying changes in the environment. As a result, people tend to tune out messages that they've heard repeatedly (known as "habituation"), even if they haven't yet taken the action that might be suggested by the messaging, and become immune to the important themes of behavior change programs.
- **How to respond:** Utilize ways to repeat the recommended actions with a variety of media and messaging, so people will pay attention to information that appears to be fresh and new. Look for new data and/or stories that can support or illustrate the main concepts.

REEMERGENCE OF OLD BIASES

- **Description:** As their willpower decreases, people may be tempted to return to past biases and shortcuts ("reemergence of old biases"). For instance, people may overlook new information that contradicts their entrenched beliefs (reemergence of the confirmation bias) or may not make the effort to change their current behaviors or

savings elections (inertia). When employees receive pay raises, for example, they may fail to adequately increase their contribution rates even if they've done so in the past.

- **How to respond:** Reward positive behavior so that people are less tempted to return to past behaviors. Remind them of past positive actions and the related benefits.

C. STRATEGIES TO ADOPT

ENCOURAGE REPEATING PRIOR HEALTHY BEHAVIORS

Address biases that are applicable in the first three stages as well as strategies that have been deployed for each stage. For example:

- Motivate people to monitor their progress, using strategies that have succeeded in Stage 1, such as stories and affect heuristics.
- Remind people to use tools from Stage 2 to reassess and update their decisions (e.g., social norms and the endorsement effect). Help them compare their future state if they continue their current course of action vs. taking new corrective action.
- Make it very easy to implement any desired changes. Even better, design course corrections that are automatically applied through pre-commitment devices or defaults, with the ability to opt out of automatic course corrections with a positive election.

Many retirement planning and health decisions require ongoing monitoring. This creates an opportunity for continual evaluation.

D. HOW STAGE 4 BUILDS ON OTHER MODELS

Stage 4 of the MORE Design incorporates the following components of other behavior change and decision-making models:

- *Prochaska's Stages of Change Model:* Stage 4 is similar to the maintenance stage of Prochaska's model, where a person solidifies their behavior change and ensures that they won't return to the unhealthy behavior (Prochaska, DiClemente and Norcross, 1992).
- *Bandura's Social Cognitive Theory:* According to Bandura, behavior becomes common when it's met with positive reinforcement; otherwise, relapse to the old behavior is possible and even likely (Bandura 1989). Similarly, Stage 4 of the MORE Design outlines the importance of reinforcements in order to maintain the current healthy behavior.
- *Heaths' Behavior Change Framework:* Heath's Behavior Change Framework explains that behavior change is difficult when people's emotional and rational sides (the "elephant" and the "rider") conflict. That's because people have a limited supply of willpower, so it's often hard to control one's emotions and behave in the appropriate way (Heath and Heath, 2010). Stage 4 of the MORE Design addresses this concern by encouraging employers and plan designers to help employees monitor their progress and make adjustments if/when their willpower is low and they're tempted to return to past behaviors.

TAILORING THE MORE DESIGN

Although the MORE Design applies broadly to all people, the model is most effective when practitioners address the particular needs and preferences of their target population. Since behavior results from an interaction between the person and the situation, individual differences affect how people respond to choice architecture and plan design (Finucane et al., 2005). Given the breadth of individual differences, it's important for choice architects to consider the specific characteristics of the targeted decision-makers when designing a choice environment.

Additionally, it's important to recognize that individuals may respond to certain interventions and not to others, so using a carefully chosen array of interventions could result in the broadest impact. Employers should use profiles and examples of hypothetical people with distinct characteristics to accommodate people in different circumstances. Employers should also take care to design default choices that may be appropriate for the greatest number of employees, while allowing any individuals to opt out if they believe that an alternative choice would work better for them.

There are three kinds of individual differences that are critical for employers to consider and accommodate: demographic differences, personality differences and attitudinal differences.

Given the breadth of individual differences, it's important for choice architects to consider the specific characteristics of the targeted decision-makers when designing a choice environment.

A. DEMOGRAPHIC DIFFERENCES

Demographic differences, including age, education and socioeconomic status, demand significant attention from employers and plan designers. At the most basic level, these demographic characteristics influence the level of knowledge, confidence and ability that people have to prepare for their own financial security. Highly educated, wealthier people will likely have greater ability and confidence than their lower-income peers to plan and save for retirement. As a result, employers may want to encourage more affluent people to increase their contribution rates, while the goal for less affluent people may be to get them to start saving for a cushion that would prevent them from reaching their retirement years with inadequate savings. Employers must be sensitive to these differences to avoid creating programs that preclude people at either end of the income spectrum from participating in their employers' plans.

Similarly, education, particularly numeracy (mathematical aptitude), may correspond with successful financial planning. Numeracy strongly correlates with both retirement savings and investment portfolios (Banks and Oldfield, 2007; Christelis et al., 2010) and is associated with higher wealth trajectories both before and after retirement, though retirement expectations and net replacement rates are relatively independent of numeracy (Banks et al., 2010). Ensuring that individuals possess the requisite mathematical literacy to recognize both the importance and consequences of retirement planning options should be a critical component of retirement interventions.

Employers should also consider how age affects information processing. Older people may prefer to receive information about retirement planning via mail or email, for example, while younger people may be more receptive to messages they receive through social media or interactive web experiences. When making decisions across a variety of domains, older adults tend to prefer fewer options and seek less information compared to younger adults (for a review, see Peters, Dieckmann and Weller, 2011).

Older adults pay more attention to and have a better memory for positive vs. negative information, whereas younger adults show the opposite pattern (for a review, see Reed and Carstensen, 2012). This age-related "positivity effect," a key component of Dr. Carstensen's socioemotional selectivity theory, has been found to affect decision-making across a range

of domains including decisions among physicians and health insurance plans (e.g., Löckenhoff and Carstensen, 2008). Recent evidence also suggests that older adults may be more responsive to positively framed health-related messages (e.g., those that emphasize the benefits of walking) than negatively framed ones (e.g., those that emphasize the dangers of inactivity) (Nothoff and Carstensen, 2014).

B. PERSONALITY DIFFERENCES

When creating programs, practitioners need to consider individual differences in personality and lifestyle. Certain people are more risk-seeking than others, for example, and may be more willing to accept plan options with great risk but also the potential for large gains, such as high-risk investment strategies. Another personality trait for employers to consider is “conscientiousness,” or the propensity to control impulses, be goal-directed and follow through with tasks. Conscientiousness has been associated with an increased practice of beneficial, health-related behaviors and a decreased practice of risky, health-related behaviors (Bogg and Roberts, 2004). Given that highly conscientious people may be similarly inclined to stick with behaviors that safeguard their financial security, they may prefer plans that afford greater decision autonomy than those preferred by less conscientious people.

Additionally, extroverted individuals appear more likely to invest in stocks (Durand et al., 2008), particularly outside of retirement accounts (Hong et al., 2004). Since investment strategies focusing on individual stocks often underperform the market, if these investments are supplanting more holistic retirement fund options, they may expose these individuals’ assets to elevated risks.

To evaluate risk-seeking, conscientiousness and other personality traits, employers may want to utilize personality assessments of their employees as part of the decision-support process.

Additionally, people differ in the degree to which they rely on emotional vs. rational decision strategies. Some people may prefer to “go with their gut” and rely on intuitive, emotional input to make choices, while others may favor a more deliberate approach. Practitioners should include both rational and emotional appeals in order to encourage behavior change for both types of people.

C. ATTITUDINAL DIFFERENCES

One way to characterize people’s attitudes suggests that people tend to fall into one of three segments when it comes to action profiles aimed at retirement planning and other complex decisions:

1. “Do it for me.” These people want someone they trust to make and implement the decision on their behalf.
2. “Help me do it.” These people want some decision-making autonomy and responsibility, but they also want guidance to ensure that they act in their best interests.
3. “I’ll do it myself.” These people want maximum freedom to make and implement their own decisions and don’t want help or guidance from others.

People end up in one of these categories as a result of their values, culture, personality and ability (how much they know about the issue), and these categories are applicable across all age groups. Currently, the majority of employer-sponsored DC retirement plans are designed for people in the third category, although many plans partially address the preferences of the second group. But employers may want to assess the percentages of their workforce that fall into each group and, if appropriate, design their plans to meet all the needs of each group.

It’s also possible that people’s attitudes can change over time or that they prefer “do it for me” solutions for complex decisions such as retirement planning but want “help me do it” solutions for simpler decisions such as budgeting and saving.

Individual differences such as these are important in each stage of the MORE Design.

DIRECTIONS FOR FUTURE RESEARCH



Psychological science and behavioral economics have contributed significantly to our understanding of retirement security and health wellness by identifying common biases, heuristics and psychological processes that underlie human decision-making. Much of the early behavioral economics research was based on laboratory studies of panel subjects in artificial settings, often utilizing responses to hypothetical questions to determine results. In some experiments, the responses may have had monetary consequences, but often these consequences aren't of the magnitude that is encountered in real-world settings.

Much of the recent research has analyzed actual employee and customer behavior in real-world settings, and this research has produced insightful results (Carroll et al, 2008; Chetty et al, 2014; Duflo et al, 2006; Madrian et al, 2001). These examples verify that applying insights from experimental research to actual decisions made by employees in workforce settings or customers in retail settings on such topics as retirement planning and health care is an important and promising area for future exploration and research.

Employers and other private organizations can add significant value by partnering with researchers and academic institutions to test the MORE Design and other interventions discussed in this paper in real-world settings. Analyzing behavioral interventions with employee or customer groups who are making actual decisions will clarify effective methods to help people plan for retirement and make health care decisions.

In addition, future research could help identify the biases that most commonly apply at each stage and test the interventions and strategies that have the most power to positively influence behavior change and decision-making.

CONCLUSIONS AND NEXT STEPS

This paper helps practitioners by synthesizing current models of behavior change and decision-making as well as the latest research on behavioral economics. The MORE Design identifies four key components of the behavior change process: motivate, optimize, realize and evaluate. At each stage, practitioners have opportunities to address human biases, heuristics and other psychological factors in order to promote effective decision making and adaptive behavior change.

The MORE Design and the companion paper *The Science Behind the MORE Design* will serve as a valuable reference tool for employers and institutions that want to translate scientific theory and research into effective programs. The MORE Design can be useful in improving retirement savings, choosing a strategy to generate retirement income, deciding when to retire, deciding when to claim Social Security and making more effective health decisions.



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