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Choice Architecture in Consumer Financial Decisions

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ABSTRACT

Outstanding U.S. consumer credit totalled $3.84 trillion, emphasizing the fact that helping consumers effectively manage their personal finances has never been more important. Among the three pillars of financial well-being, this paper addresses the last pillar related to behavioral facilitation, given that one of the biggest challenges most consumers face is their inability to convert their best intentions into actual behavior. Specifically, this paper reviews and discusses various behavioral interventions in choice architecture designed to facilitate healthy financial behavior. These include enhancing physical height to increase level of thinking and long-term focus, incorporating incidental cues to form virtual boundaries and evoke implementation mindset, and using verbal/visual presentation of multi-faceted financial goals to emphasize goal singularity and increase implementation. Findings across such studies contribute to recent research on financial decision-making and choice architecture, and they provide readily applicable strategies for policy makers to "nudge" consumers toward more responsible financial decisions.

Keywords: Nudge, financial decisions, intention-action gap, mindset, behavioral decision making, consumer behavior

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U.S. household debt balances have steadily increased for fifteen consecutive quarters and reached a new peak of $13.21 trillion in the first quarter of 2018, of which $3.84 trillion is non-housing debt (Federal Reserve Bank of New York, 2018). Clearly, helping consumers effectively manage their personal finances is urgent and of great interest to government, financial institutions, and consumers themselves. Given the complexity of most financial decisions such as mortgages, various loans, investments, or retirement saving, many experts and policy makers have recommended financial literacy and financial education to help consumers improve financial decisions (Greenspan, 2005; Lusardi and Mitchell, 2011; Morton, 2005). However, an extensive meta analysis on financial education has shown that with a cost of billions of dollars, financial education interventions explained only about 0.1% of the variance in the financial behaviors studied (Fernandes *et al.*, 2014). In a similar vein, another article suggested that while financial literacy is very important, financial education alone is not enough for healthy financial behavior (Soman and Mazar, 2012): Three pillars are necessary to achieve financial well-being: financial literacy that disseminates knowledge about responsible financial decisions; numeracy that equips people with a mental model for dealing with non-intuitive mathematical relationships such as compound interest; and lastly, behavioral facilitation, which helps people convert their intention to actual behavior.

Both our own experiences as consumers and academic research over the past few decades demonstrate that even if people are aware of the importance of a long-term goal, they often fail in converting their good intentions into actions across various domains, a challenge commonly known as "the last mile problem" in behavior research (Soman, 2015). For example, consumers might establish the goal to stay fit and sign up for gym membership, but they rarely go to work out; or they plan to have a healthy diet but end up overeating often times. In the financial domain, many people who would like to save are often unable to do so because of other priorities or temptations to spend (Thaler and Benartzi, 2004). Aside from saving, for lower-income people who are eligible for financial aid, even if they are aware of the aid prospects that are very beneficial, many fail to claim any of them. For example, the Canada Learning Bond introduced a program that gives low-income families $500 for their children's education. However, as high as 84% of the eligible households did not take up this opportunity in the first year, not because the free money was unwanted, but because they did not find time to act on it (Soman, 2015).

Given the prevalent challenges of effectively converting intentions into actions for financial well-being, the present paper focuses on the behavioral facilitation aspect and discusses recent findings on nudge and choice architecture designed to encourage goal-consistent financial behavior. Below I first review key premises of behavioral economics (Thaler and Sunstein, 2008), then discuss the effect of three novel contextual cues in the choice architecture on

financial decisions: physical height (Aggarwal and Zhao, 2015, 2018), virtual boundary (Zhao *et al.*, 2012), and goal presentation (Soman and Zhao, 2011; Zhao *et al.*, 2018).

1 Key Premises in Behavioral Economics

Neoclassical economics and governmental economic policy view consumers as rational decision-makers who seek to maximize their utility and follow their true preferences. Departing from this view, a huge amount of research in psychology indicates that consumers often show "bounded rationality," and their decisions are subject to various contextual factors in a predictable and systematic way (Kahneman, 2003; Kahneman *et al.*, 1991; Kahneman and Tversky, 1979; Simon, 1956). In accordance with these observations, research in behavioral economics shows that small changes in the decision environment can exert a disproportionate influence in guiding behavior. Rather than placing choice restrictions or imposing economic incentives, simply changing the way choices are presented in the environment can create nudges and alter people's behavior (Thaler, 2015; Thaler and Sunstein, 2008).

Consider the following hypothetical scenarios to help consumers increase saving. Law-makers could create a new regulation that forces all employees to deduct x% of their earnings and put it in a mandatory savings account every time they receive their salary payment. An economist would offer an attractive interest rate as an incentive for employees to put money into the savings account, or even charge them a penalty for exceeding a certain amount of money in their checking account. A traditional marketer would try to persuade people with more arguments highlighting the importance of saving. A behavioral economist, however, would simply change the way the options are presented in the choice architecture such that saving x% of monthly earnings becomes the default option, and one could opt out if he or she doesn't want this option (Ly *et al.*, 2013; Thaler and Sunstein, 2008). Using such a nudge neither takes away consumers' freedom of choice as to whether and how much to save, nor imposes an economic penalty on consumers or economic cost on the banks, and it can be a very cost-effective strategy.

Before further elaborating the role of nudge, it is important to note that while subtle nudges can impact many people's behavior, nudge doesn't work for all. Generally speaking, there are three segments of human behavior: the Yes-Done, the No-Never, and the Yes-Later. Using saving as an example, those who have the goal of saving and are consistently contributing to their savings account (the Yes-Done segment) do not need extra help; for those who do not even have the intention to save because they simply can't make their ends meet or because their goal is to indulge in the short run (the No-Never segment), changing their behavior takes more than a nudge—perhaps more education or

even economic incentives. Many people, however, fall in the Yes-Later segment where they have a desirable goal to save, yet they procrastinate or fail to work on it due to various reasons such as self-control problems, myopia, perceptual errors, or visceral factors (Ainslie and Haslam, 1992; Baumeister, 2002; Elster, 1979; Herrnstein and Prelec, 1991; Loewenstein, 1996; Schelling, 1984; Trope and Liberman, 2003). Nudges are effective for this group of people who need a little help achieving the goal they have set up for themselves.

As some key principles underlying the effect of nudging and behavioral economics, prior work demonstrates classic effects such as status quo effect (e.g., setting organ donation as a default leads to significantly higher donation rates compared with when the default is to not donate; Johnson and Goldstein, 2003), endowment effect (e.g., pre-owning an option increases valuation of the option; Kahneman *et al.*, 1991; Thaler, 1980), sunk-cost effect (e.g., people hold on to losing stocks because of sunk cost; or they visit the gym more frequently when sunk cost is salient; Gourville and Soman, 2002; Thaler, 1985), availability and salience heuristics (e.g., making the desirable option more salient to increase adoption of online service instead of the more costly on site visit; Castelo *et al.*, 2015; Tversky and Kahneman, 1974), anchoring effect (e.g., using a random number in the decision context as an anchor for price; referring to social norm as an anchoring point to encourage green behavior; Ariely *et al.*, 2003; Tversky and Kahneman, 1974), and the simplicity effect (e.g., using traffic light imagery to highlight (un)healthiness of food and nudge healthy eating, or using green and red "lights" to indicate water (over)usage and reduce utility cost; Ly *et al.*, 2013).

In addition, recent research documents the impact of various contextual factors on decision-making (Reisch and Zhao, 2017). For example, music played in a retailing environment increases choice of products sharing the same country of origin as the music (North *et al.*, 1999); warm temperature increases people's perceptions of social closeness to others and their likelihood to conform for various financial decisions such as stock price forecast and betting (Huang *et al.*, 2014); priming social isolation increases pursuit of riskier, but potentially more profitable, financial opportunities (Duclos *et al.*, 2013); or crowdedness in the choice environment can highlight safety-related constructs, resulting in decisions favoring a safer option and more aversion to risky gambles (Maeng *et al.*, 2013).

2 From Financial Goals to Financial Actions

While these recent studies examine the effect of behavioral economics and nudge across a wide variety of consumer choices, the current paper focuses on the common challenge in financial decisions regarding the goal–action gap over time for the "Yes-Later" consumers where behavioral facilitation is needed. The

people in this segment often have a good intention for a certain financial goal (be it saving, investing, or donating), but they fail to adopt consistent actions toward the goal. Prior literature suggests a number of different strategies for motivating financial-goal pursuit: For example, setting aside and labeling the designated funds as "Savings" increases the likelihood that the money gets saved (Dupas and Robinsona, 2013; Soman and Cheema, 2011; Thaler, 1999); partitioning a monetary resource into small portions decreases spending, because partitioning creates additional decision points, helps regulate mindless spending, and aids saving (Soman and Cheema, 2011), or interacting with virtual future selves leads people to be more likely to consider the future and make financial decisions consistent with long-term benefit (Ülkümen and Cheema, 2011). Other strategies to increase saving include making the saving choice a default option (Thaler and Benartzi, 2004), sending reminders to deposit (Karlan *et al.*, 2016), and using commitment devices that restrict the window of choices (Ashraf *et al.*, 2006; Bryan *et al.*, 2010).

Adding to these existing insights into how behavioral economics can play a positive role in facilitating beneficial financial decisions, I draw on my recent research on financial decisions and discuss how to utilize contextual cues to translate the good intention to action in financial decisions. Because the goal/action discrepancy obviously involves both the goal and action, I address this from two perspectives: highlighting the long-term goal and activating the implementation. More emphasis is put on activating the implementation, as behavioral facilitation is one of the biggest challenges that many consumers face.

3 Increasing Physical Height to Increase Construal Level and Long-term Goal Achievement

An important theory explaining people's decision discrepancy over time is the construal-level theory (CLT; Liberman and Trope, 1998). CLT proposes that people construe information at different levels. At high construal levels, people take a big-picture perspective and focus on the long-term aspects; whereas at low construal levels, they take a narrow perspective and focus on the nitty-gritty details (Liberman and Trope, 1998; Rosch, 1975; Trope and Liberman, 2003; Trope and Liberman, 2010; Vallacher and Wegner, 1987). Many people tend to focus on the desirable long-term benefit when setting up a goal for the distant future, but they ignore the long-term benefit and instead attend more to ease and convenience when deciding whether to take actions today. Behaviors like this in keeping with low-level instead of high-level construals in daily routine lead to self-control failure or the intention–action gap (Fujita, 2011; Fujita *et al.*, 2006). For example, at a high construal level, people set up a fitness goal and join the gym because they see the long-term

benefit of being fit; however, they rarely visit the gym in their daily routine at a low construal level because of time constraints and/or the hassle to get there. In a financial context it has been shown that at a higher construal level people prefer larger later rewards because they see the greater face value, but at a lower construal level they prefer smaller rewards that are available sooner because waiting is an inconvenient hassle (Ainslie and Haslam, 1992; LeBoeuf, 2006).

While temporal distance and other types of psychological distance (spatial, social) have been shown to be the major determinant of construal level, my recent work built on the research on the effect of contextual cues in the decision environment and showed that physical height can increase construal level and highlight the big picture of the decision (Aggarwal and Zhao, 2015). This theorizing draws on the embodied cognition literature (Barsalou, 2008) and the metaphorical links between physical concepts and abstract knowledge (e.g., physical warmth and social warmth (Williams *et al.*, 2009)). As most people acquire the natural association between physically higher (lower) vantage point and broader (more restricted) physical view from their direct life experiences, this association becomes well-grounded in people's mind over time. Consequently, the activation of the more basic concept of physical height can automatically activate the corresponding perceptual processing. And because global versus local perceptual processing is related to a higher versus lower level of conceptual construal (Liberman and Förster, 2009a,b), perception of height will lead to higher construal level. A series of studies confirmed this prediction and demonstrated that perceived physical height (e.g., sitting at a higher stool, being at the upper level of a building, or simply looking at pictures with a bird's-eye view) evoked high construal level and resulted in greater big-picture orientation, broader categorization, or high-level action identification (Aggarwal and Zhao, 2015, 2018).

As a result of experiencing greater physical height, consumers engage in financial decisions that are consistent with their long-term benefit. In one of the studies in Zhao and Aggarwal (2018), for example, we examine the effect of perceived physical height on financial investment where participants need to make trade-offs between smaller sooner (SS) rewards and later larger (LL) rewards. Participants ($N = 58$) were told to imagine going for a vacation and taking either a 30-minute hot-air balloon ride (priming high vantage point) or a scuba diving session (priming low vantage point). They were then asked to write down what they imagined they would see, hear, or experience. Next, participants moved to a financial decision and were asked to choose between getting "$27 tomorrow" (SS) versus"$34 in 16 days" (LL), and getting "$8 tomorrow" (SS) versus "$18 in 30 days" (LL). Consistent with prior literature concluding that higher-level construal leads to a greater preference for a LL over a SS reward (Ainslie and Haslam, 1992), analysis on the aggregate measure of the two choices shows that participants in the high (hot-air balloon) condition were indeed significantly more likely to choose the LL rewards compared to

those in the low (scuba diving) condition ($M_{high} = 86\%$ vs. $M_{low} = 63\%$, $\chi^2(1) = 7.92$, $p < .01$), indicating a long-term focus.

In another study in Aggarwal and Zhao (2015) that involved a real lottery choice, participants ($N = 59$) were told that they will be entered into a lottery at the end of the study, with a 1 in 100 chance to win \$50. They were further told that payment to the winner would be administered by an online company similar to PayPal, whose central bank was located in the small city of Echuca that was about 2,500 kilometers away (Maglio *et al.*, 2013). To manipulate perceived height, we provided participants with a map of North America showing the location of Echuca and their home city of Toronto. In the high condition, Toronto was located north of (i.e., visually higher than) Echuca on a vertical line, whereas in the low condition, Toronto was located south of (i.e., visually lower than) Echuca on the vertical line. Participants were then told that in the event they won the lottery, they had the option of receiving either \$50 immediately after the study (smaller sooner, or SS) or \$65 in three months (larger later, or LL). They were asked to state which option they would choose if they won. The results showed that a greater percentage of participants in the high condition (i.e., when their home location of Toronto was north of Echuca) preferred the larger later reward (\$65 in three months) compared to those in the south location ($M_{high} = 78\%$ vs. $M_{low} = 50\%$, $\chi^2(1) = 4.86$, $p < .05$), suggesting once again that a perceived higher physical level results in longer-term focus and thus choices consistent with a high construal level.

These studies indicate the important role played by a subtle contextual factor—(perceived) physical height—in activating the big-picture orientation and long-term focus. People often lose the big picture and long-term focus when making everyday decisions, which can lead to self-control failure (Fujita, 2011; Fujita *et al.*, 2006). Our findings add to research on choice architecture and nudging (Thaler and Sunstein, 2008) by showing that subtle and conceivably insignificant factors such as perceived height can potentially increase construal level and long-term focus without significantly changing financial incentives or restricting freedom of choice. They also offer interesting implications to policy makers and government agencies striving to find inexpensive and effective ways to help people make the choices that are beneficial to long-term welfare (e.g., saving).

4 The Implementation Mindset

Besides the reminder of long-term focus, facilitating behavior is even more critical for successful goal attainment (Gollwitzer, 1999; Vohs *et al.*, 2012). Early research on channel forces (i.e., small situational forces) indicated the "power of the situation" in influencing behavior (Lewin, 1951). Later work

further tested the impact of contextual interventions in facilitating behavior. For instance, Leventhal *et al.* (1965) showed that after attending a lecture about the importance of receiving a tetanus shot, participants who had been given a campus map with the location of the health center circled were subsequently more likely to come back for the tetanus shot than those who attended the lecture but received no map. Mullainathan and Shafir (2009) studied the decision of unbanked, low-income population members to open bank accounts. Members of the target population either attended a workshop where they received a referral letter and forms to open an account; or they additionally were able to submit an irrelevant first form to a bank representative during the workshop. The latter participants were not only more likely to follow through and complete the application process, they also used the bank services thereafter more regularly.

While the interventions in these early studies provide evidence for the effect of small situational factors on behavior, it was empirically unclear why these effects occurred. The theory of implementation mindset (Gollwitzer, 1999; Gollwitzer and Bayer, 1999) provides a potential explanation for these effects. This theory identifies two types of mindset related to goal pursuit: deliberative mindset in which individuals are uncertain about their goals and seek to define a desired outcome by considering the pros and cons of the goal; and implementation mindset in which individuals have established the goal they wish to pursue and are considering when, where, and how to attain it. Multiple studies show that implementation mindset increases the likelihood of behavioral enactment and leads to more successful goal attainment across different domains and tasks such as writing a report about Christmas vacation (Gollwitzer and Brandstätter, 1997), performing medical check-ups (Orbell and Sheeran, 2000), or greater goal commitment in various other domains (Dhar *et al.*, 2007; Taylor and Gollwitzer, 1995; Xu and Wyer, 2008).

Given the powerful role of implementation mindset in facilitating goal-relevant behaviors, it is important to understand factors that evoke such a mindset. Classic literature in this area shows that instructing people to think about the how (vs. the why) of attaining a goal can result in a shift to implementation mindset (Taylor and Gollwitzer, 1995). Further, explicitly asking people to indicate their relative preference within a set of objects can enhance their implementation orientation in follow-up choices (Xu and Wyer, 2007, 2008). The specific mindset that people adopt can also change as a function of physical location. For example, shoppers at a grocery store tend to adopt a more implemental mindset when they are inside rather than outside the store (Lee and Ariely, 2006).

In our recent research, we propose that seemingly irrelevant or incidental cues in the environment can activate an implementation mindset. These cues include objects and patterns in a waiting environment that create a virtual boundary (Zhao *et al.*, 2012), or appropriate presentation format of goals that

emphasizes goal singularity (Soman and Zhao, 2011; Zhao *et al.*, 2018). I discuss these below in more detail.

5 Irrelevant Environmental Cues Create a Virtual Boundary and Increase Commitment

During the temporal/physical gap between goal setting and actual behavior, people often need to wait, and they can easily lose motivation or commitment during the wait. For example, a customer waiting for an upcoming appointment with a local bank to open a savings account might lose the commitment as time goes by and decide to cancel the appointment; or a customer already queuing in the bank for his/her turn for some financial advice might even think the line is too long and thus renege. In Zhao *et al.* (2012), we examine whether task-irrelevant objects and patterns in a waiting environment can prompt implementation mindset and increase task commitment. As consumers are all familiar with, many waiting environments are characterized by cues such as queue guides, area carpets, and floor mats, or even other random objects such as a potted plant. In accordance with past research indicating that consumers naturally find landmarks or other physical markers in the environment to define categories (Tversky, 1992), Zhao *et al.* (2012) proposed that consumers tend to perceive the incidental cues in the waiting environment as a virtual boundary that divides this environment into two categories: in-system and out-system. Once they cross this virtual boundary and perceive themselves to be in-system, consumers adopt an implementation mindset, becoming more optimistic and committed to their goal.

A field study was conducted to observe consumers' reneging behavior in a queue featuring different queuing guides at an ATM in the concourse of a subway station in Hong Kong (Zhao *et al.*, 2012). The ATM provided financial services like cash withdrawal, bill payment, cash transfer, tax payment, and other account-management functions. In collaboration with the facilities manager, we employed three conditions that were alternated during morning rush hour, lunch hour, and evening rush hour. In the short-guide condition, we placed a short queue guide next to the ATM, such that three or four people could wait "within" the area covered by the guide. In the long-guide condition, a longer queue guide was placed, such that six or seven people could stand in the area covered by the guide. In the control condition, no queue guides were used. Over a period of about four weeks, a research assistant unobtrusively observed 311 individuals who joined the queue at the fifth position—a position that was either in-system or out-system depending on the length of the queue tape in different conditions. The results showed that type of queue guide significantly impacted consumers' reneging rate ($\chi^2(2) = 6.04$, $p < .05$). Specifically, significantly fewer people in the long-guide condition

(in-system condition) reneged on the queue than did people in the short-guide condition (out-system condition) ($M_{long\ guide} = 14\%$ vs. $M_{short\ guide} = 25\%$; $\chi^2(1) = 4.07$, $p < .05$) or the control condition ($M_{control} = 26\%$; $\chi^2(1) = 5.30$, $p < .05$), which suggested that being inside the virtual system delineated by the longer queue guide led to higher commitment to perform the financial task.

Another field study in Zhao *et al.* (2012) provided evidence for consumers' action orientation while waiting in line for an ATM in the lobby of an office building in Hong Kong with the "in-system" perception. In collaboration with the facilities manager, we placed a queue guide that allowed either five people or three people to stand within the area marked by the guide. Over a course of ten working days, a research assistant observed 805 people and recorded the position at which they retrieved their ATM card from their pocket/wallet/purse to prepare themselves for the financial transaction at the ATM. The results showed that the position where most consumers took out their ATM card corresponded to the point at which they first stepped into the queue guides. Specifically, when the queue guide was long and could hold five people, the earliest position at which people started to retrieve their cards was the eighth position. More importantly, significantly more people retrieved their ATM card when they were at the fifth position in the queue (a turning point from out-system to in-system) than at the other positions ($M_{5th\ position} = 38\%$ vs. $M_{average\ of\ the\ other\ positions} = 9\%$; $\chi^2(7) = 275.80$, $p < .0001$). However, when the queue guide was short and held only three people, while the earliest point at which people started to retrieve their cards was the sixth position, a greater percentage of people pulled out their ATM card when they were at the third position than at the other positions in the queue ($M_{3rd\ position} = 45\%$ vs. $M_{average\ of\ the\ other\ positions} = 11\%$; $\chi^2(5) = 244.77$, $p < .0001$)—again at the moment they entered the in-system category. Direct comparisons between two conditions at each of these two positions (to hold the distance to the goal constant) showed that at the fifth position, significantly more people in the long-guide condition took out their ATM card than in the short-guide condition ($M_{long\ guide} = 38\%$ vs. $M_{short\ guide} = 15\%$; $\chi^2(1) = 50.50$, $p < .0001$), whereas at the third position, significantly more people in the short-guide condition took out their ATM card than in the long-guide condition ($M_{short\ guide} = 45\%$ vs. $M_{long\ guide} = 5\%$; $\chi^2(1) = 175.71$, $p < .0001$). These results confirm that crossing the virtual boundary demarcated by a task-irrelevant cue such as queue guide increases people's action orientation and commitment to their financial goal.

While the studies above focused on the physical waiting environment, a recent study investigated how categorization of time can impact waiting commitment during a temporal gap (Tu and Soman, 2014). This study demonstrated that categorizing a future time point within the present period leads to significantly greater task initiation and commitment than categorizing

it outside the current period (e.g., categorizing Sunday as this week or next week).

These findings contribute to the literature on implementation mindset (Gollwitzer, 1999), effect of contextual factors (Chartrand *et al.*, 2008; Custers and Aarts, 2010), and choice architecture (Thaler and Sunstein, 2008); they also offer important and easily applicable recommendations to keep consumers motivated as they move (physically or temporally) closer to their financial goals. In addition, the greater action orientation as a result of crossing the virtual boundary can help increase service providers' operational efficiency.

6 Goal Singularity Prompts Implementation Mindset and Increases Saving

Many financial goals such as saving, donation, or investment involve multiple good reasons to embrace or multiple options to choose from. For example, there could be many good reasons why one should save, such as for future retirement, a vacation house, or college education for the kids. Both common wisdom and classic literature on persuasion suggest that the more goals/reasons there are to save, the greater the motivation to save. In fact, this is the common practice in many financial firms that tend to give their clients "Top 10 Reasons Why You Should Save" to encourage them to save, similar to when a travel agent gives clients a list of "Top 10 Things to Do in Boston" to encourage them to visit the city.

However, in Soman and Zhao (2011), we show that counter to these lay intuitions, focusing on multiple savings goals (e.g., retirement, vacation house, and saving for kids' education) actually results in lower savings intention than focusing on a single goal. This is because when multiple goals are highlighted, consumers may be contemplating which of these goals is more important and by how much. In particular, because multiple goals compete for the limited monetary resources (e.g., every dollar people save for their children's education is a dollar they cannot save for their retirement), thinking about this trade-off keeps people in a deliberative mindset and thus they are not readily able to implement the savings goals. On the contrary, if only a single goal is highlighted, consumers no longer need to make goal trade-offs and are more likely to move onto the second stage of the goal pursuit—a position to think about implementing the goal. As a result, their commitment to the savings decision will be stronger and their savings intention will be higher.

In one of the field studies in Soman and Zhao (2011) that was conducted in a small town in India, eighty-three households who earned cash income paid every two weeks (income range: about $30–$45USD every two weeks) were invited to participate in a basic financial literacy program. The financial planner, accompanied by a social worker, visited each of the families and helped

them identify better money-management strategies. Participating households were told that it is helpful to have specific goal(s) in mind when saving. In the single-goal conditions, participants were told to save more because it would help finance their children's education. In the multiple-goal conditions, they were provided with two additional savings goals: to finance any health care needs they might have and to provide a nest egg for when they retire, in addition to financing children's education. In the control condition, no specific goals were given. To facilitate the earmarking of savings (Soman and Cheema, 2011), we also provided half the households with an envelope to put their savings in. The envelope had a small picture of a child in the single-goal condition, and three pictures (a child, a hospital, and an old couple) in the multiple-goal condition. Participating households' savings amount was recorded over the course of six months, and we measured the total savings rate as a percentage of the total income saved during that period. The results showed a significant main effect of envelopes ($M_{envelopes} = 8.46\%$ vs. $M_{no\ envelopes} = 6.90\%$; $F(1, 65) = 8.91$, $p < .005$), confirming the earmarking effect (Soman and Cheema, 2011). More related to our central prediction, there was also a main effect of number of goals ($M_{single\ goal} = 9.24\%$ vs. $M_{multiple\ goals} = 5.79\%$; $F(1, 65) = 37.45$, $p < .001$) with no significant interaction, suggesting that a single goal led to greater saving than multiple goals, regardless of whether an envelope was provided or not. It is also important to note that providing multiple goals still without the pictures led to higher saving rates than providing no specific goals at all ($M_{multiple\ goals} = 5.28\%$ vs. $M_{no\ goal} = 3.54\%$; $t(1, 45) = 3.10$, $p < .005$).

In additional lab studies, Soman and Zhao (2011) replicated the effect of single savings over multiple savings with different single goals (i.e., the single goal being to finance housing, future retirement, or children's education, in order to rule out the concern that the stronger effect of single goal in the field study came only from thinking about kids' education). More importantly, the lab studies provided evidence that multiple goals led to decision difficulty and choice deferral, whereas a single goal led to implementation mindset and greater action orientation. If the level of competition between multiple goals is softened (e.g., *"although it can seem like different savings goals 'compete' with one another, the fact is that they all serve your overall goal of achieving future financial well-being"*), or when the decision difficulty related to the trade-offs is attenuated (e.g., when one has a high income and can easily save for multiple purposes), the disadvantage of multiple goals is attenuated as well. In follow-up studies, we showed that appropriate visual displays for goal depiction can also emphasize a common single savings goal. For example, using a converging visual display where multiple sub-goals flow into the overall savings goal from left to right can emphasize the ultimate savings goal and alleviates the competition among sub-options, which increases saving (Zhao *et al.*, 2018).

These findings provide useful insights to the literature on saving and financial decision-making (Fernandes *et al.*, 2014; Prelec and Loewenstein, 1998; Thaler, 1999) by demonstrating a counter-intuitive way to increase savings intention/behavior—that is, limiting the number of saving goals to evoke an implementation mindset through either verbal description or visual presentation, which leads to higher savings intention/behavior. These findings can be easily implemented in marketing practices when financial advisors or policy makers help consumers with their saving, donation, or investment goals. Given the prevalent availability of multiple options related to any of these decisions, consumers' decisions will be largely facilitated if financial advisors emphasize one single option/reason at a time and avoid the common mistake of highlighting numerous options/reasons for the goal. Conversely, if certain financial behavior is to be discouraged (e.g., gambling), perhaps highlighting the numerous options will increase decision difficulty and hinder implementations.

7 Conclusion

7.1 Summary and Implications

In this paper, I discussed key premises of behavioral economics and summarized recent findings on how seemingly irrelevant contextual cues can create behavioral interventions and impact consumers' decisions. More importantly, I focus on the common challenges that many consumers face in converting their goals into goal-consistent actions and discuss the effect of choice architecture on consumer financial decisions. As mentioned in the beginning of the paper, we can delineate three segments of consumers: Yes-Done, No-Never, and Yes-Later, and I focus on the "Yes-Later" consumers who are most likely to experience the goal–action gap. To address the goal–action discrepancy from both sides, I discuss behavioral interventions designed to either highlight the long-term goal or activate the implementation.

To summarize, I show that to boost the salience of long-term goals during everyday decisions, physical height (induced by a higher stool, higher location, or simply perception of height by visualizing views from a high vantage point) can increase consumers' long-term focus and prompt them to be more patient for larger future financial rewards (Aggarwal and Zhao, 2015; Zhao and Aggarwal, 2018). To facilitate implementation of the goal-consistent behavior, I illustrate that incidental cues in the waiting environment (e.g., area carpet, queue guide) can be perceived as a virtual boundary. Crossing this virtual boundary leads to an implementation mindset, which increases consumers' commitment to the goal and action orientation during the temporal/physical gap between the goal and actual behavior (Zhao *et al.*, 2012). Further,

drawing on the simplicity principles, I show that for financial goals that are often accompanied by multiple options (e.g., saving for healthcare, retirement, and a vacation house), counter to common intuition, emphasizing multiple options keeps consumers in a deliberative mindset, which defers their actions. Emphasizing a single goal, however, evokes an implementation mindset and increases savings behavior (Soman and Zhao, 2011). Besides verbal instructions, goal singularity can also be achieved through appropriate visual presentation of the goal structures (Zhao *et al.*, 2018).

These novel findings contribute to a variety of literature on goal attainment, construal level, implementation intention, and financial decisions. They also add to the emerging research on contextual cues, nudging, and choice architecture (Custers and Aarts, 2010; Thaler and Sunstein, 2008). Besides the theoretical contributions, these findings suggest readily applicable strategies (e.g., priming height perception, placing a seemingly irrelevant object beside the queue to create in-system perception, highlighting a single goal using verbal or visual display) for policy makers to "nudge" consumers toward making more responsible financial choices and increasing financial well-being. Although the studies reviewed in this paper are in the financial domain, similar effects have been obtained in other domains such as product choice, healthy eating (Zhao and Aggarwal, 2018), waiting for medical appointments or other daily tasks (Zhao *et al.*, 2012). As such, there is considerable room for creativity in the employment of incidental cues or different information presentation formats to motivate people to stay committed to their long-term goals and implement these goals to achieve long-term welfare.

In considering the implications of these findings along with other prior findings on nudging in the literature, practitioners should proceed with caution and find the right calibration of behavioral interventions in their particular decision environments. For example, while we found in Zhao *et al.* (2012) that a three-person queue guide was more effective in retaining customers in the queue for the ATM compared with a six-person queue guide, this does not necessarily mean a three-person queue guide is a powerful tool everywhere. We determined the length of the guide based on a prior observation that queue lengths in front of the ATM in this subway concourse typically ranged from three to nine people, the total waiting time ranged from five to ten minutes, and most reneging occurred within the first three minutes of joining the queue. In scenarios where there is rarely a line, perhaps a shorter queue guide that holds only two people or even just one person is more effective; and in other scenarios where there are always long lines like those for Disney World's rides, longer queue guides holding 10 people might be more effective. Practitioners should apply the concepts demonstrated in the literature (e.g., increasing construal level with physical height or evoking implementation mindset with an object in the environment), but conduct pretests to determine the right type of cues and right level of "dosage" in their particular decision contexts.

7.2 Skepticism of Nudging

Several important questions remain: Is behavioral economics always effective, and is it too manipulative? While a great amount of research proves the effectiveness of behavioral economics in nudging choices across a wide range of domains (Castelo *et al.*, 2015; Haggag and Paci, 2014; Johnson and Goldstein, 2003; Ly *et al.*, 2013; Madrian and Shea, 2001; Thaler, 2015; Thaler and Sunstein, 2008; Tversky and Kahneman, 1974), there are certainly many areas where nudging is not enough or not the best practice. Compared with other strategies to change behavior such as law enforcement, economic incentive, or education, the advantage of nudge is that it does not take away the freedom of choice from the decision-makers, and it can usually be easily incorporated in the decision context with low cost. However, a closer look at the decision domains where nudging has been successfully employed (e.g., saving money or spending it, donating money/time or not, choosing investment option A or B, eating fruit or cake, going to the gym or watching TV, putting the plastic bottle in the recycling bin or trash can) suggests that although choices in these domains can have long-term consequences, none of these choices are absolutely right or wrong, or result in immediate harm to others. When the decisions have high stakes such that there is actually a wrong choice, and the wrong choice can have severe consequences to others or the society (e.g., break into another's house), law and policy regulation are essential to *require* a certain choice and ban the other choice (as opposed to *recommend* an option through nudge).

Another way to *recommend* a choice is through economic incentives (rebate for recommended options and "tax" for the discouraged options). These are helpful when people's behavior is motivated by costs and benefits (Soman, 2015), and when these economic incentives do not get overly costly for the company/government (e.g., direct monetary loss due to the rebate given to the green product; or indirect loss due to the frustration of customers paying the "tax"). Lastly, education is important when people simply do not understand what the decision entails, what the pros and cons are, and can't form an attitude towards a decision. For example, college loan is a complicated decision, or retirement saving is a new subject for most young working professionals. People first need to have some basic financial education and financial literacy (e.g., basic principles of saving, such as compound interest) before they can set up a financial goal. After they are equipped with basic knowledge and form a goal, yet fail to actually work on the goal due to various reasons (be it self-control problems, myopia, inertia, or visceral factors), nudging can be an effective and inexpensive way to guide them to choose an action that is consistent with the goal they set up for themselves.

The other concern many people have with nudging is whether it is too manipulative and "tricks" people into things they do not want. As such,

nudging is perceived to be a new paternalism. As highlighted several times in this paper, nudge is effective for people who are challenged with inconsistency between their goal and their behavior. When people fail to implement the goal they set up for themselves, a nudge in the choice architecture can help facilitate goal-consistent behavior and ultimately help them obtain their goals. That is, assuming a consumer Mark sees merit in the importance of future financial welfare and would like to save. However, he often can't resist the temptation of spending, which leads to zero savings at the end of each month. With the goal of saving in mind, a behavioral intervention designed to encourage saving (e.g., setting aside a fixed amount of saving as default every month; highlighting Mark's long-term focus when he is about to spend; putting Mark into an implementation mind set via appropriate contextual cues) can possibly nudge Mark to take the action to save. If another consumer John has no intention to save, or is even against saving because his philosophy is to indulge and live in the moment, or he simply can't make his ends meet, a saving nudge is unlikely to steer him towards saving. Therefore, nudge can help people accomplish the specific goal they set up for themselves rather than manipulating their behavior towards a direction not in their best interest. While more than 150 governments worldwide make use of nudges to influence consumer behavior and consumer choices, a recent study investigated what people actually think about nudges across multiple countries and found that the majority of the citizens support nudges in all these countries (Sunstein *et al.*, 2017). Interestingly, citizen approval rate of nudges is positively correlated with trust in government. If trust in government is lower, citizens are less likely to approve the nudge, and nudge is less likely to change behavior. This further implies that nudge does not randomly manipulate people's decision—for it to be effective, there needs to be a consistency between the intention behind the nudge and consumers' own intention.

While the debates between behavioral economics and neoclassical economics are still going on, more studies to further validate the effect of nudge in different consumer decision domains and test its boundary conditions are warranted. After all, the common goal of behavioral economics and neoclassical economics is to find "good government" to improve people's well-being.

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