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Influencing Financial Behavior: From Changing Minds to Changing Contexts

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This article reviews interventions that are effective in changing behaviours in ways that enhance financial capability. Traditionally, behavior change has been seen through the lens of “changing minds”: if we can change the way people think—their beliefs, attitudes, and goals—then we can change the way they behave. More recent developments in behavioral theory show that “changing contexts” can have a powerful effect on behavior: we can change behavior by sometimes quite subtle changes to the environment or context within which decisions are made. We focus largely on the influence of context and provide examples from current UK banks that have changed the “choice architecture” of their products.

Keywords: Behavior change, Consumer behavior, Context effects, Choice architecture, Retail products

INTRODUCTION

In many countries, individuals are encouraged to take personal responsibility for their financial affairs. The cost of not making good financial decisions can significantly affect individuals and society as a whole. Therefore, the question of how to improve population-wide financial capability is of increasing concern to policymakers. In the United Kingdom, for example, there have been recent attempts to measure financial capability according to five behaviors under five key headings: keeping track, making ends meet, planning ahead, choosing products, and staying informed (FSA [2006]). This paper is focused on how recent advances in behavioral economics and behavioural theory can help us better understand financial decision making and, ultimately, to design interven-

tions that make it easier for us to behave in ways that improve our financial capability.

Behavioral economics seeks to combine the lessons from psychology with the laws of economics (Kahneman [2003]). The basic insight of behavioral economics is that human behavior is guided not by the dictates of rationality embodied in a super-computer that can analyze the costs and benefits of every action. Instead, it is led by our very human, sociable, emotional, and sometimes fallible brain. Psychologists have been studying these characteristics for more than a century, and writers and thinkers for much longer (Triplet [1898]). In a nutshell, the mental shortcuts that serve us so well in much of life can also get us into trouble, both as individuals and as societies.

Consistent with these observations, two general paradigms for population-wide behavior change have emerged in recent years—models that aim to change cognitions (such as beliefs and attitudes) and models that change the context (environment or situation) within which the

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person acts. Most traditional interventions prompt changes in cognitions to bring about behavior change (Webb and Sheeran [2006]). This may involve providing new information or changing incentives. The presumption is that people will analyze the relevant pieces of information and the numerous incentives offered to them, and act in ways that reflect their best interests. In contrast, the second route relies mostly on contextual changes to bring about behavior change where the focus is on the more automatic processes of judgment and influence. The context model recognizes that people are sometimes seemingly irrational and inconsistent in their choices. As a result, it focuses more on changing behavior without “changing minds.”

We recognize that the most effective and sustainable changes in behavior will come from the successful integration of interventions designed to change cognitions and contexts. Until recently, however, the second route has received relatively less attention from researchers on behavior change than the first. We also recognize that there may be significant public concern at attempts at influencing citizen behavior, and there are many ethical and normative issues associated with the use of influence techniques that may depend on the automatic mind. We leave these issues to one side here, focusing on the evidence in relation to behavior change which can then be fed into the normative debate.

The second section of the paper reviews the evidence relating to the more traditional interventions that seek to improve financial capability through information and education designed to change minds. These interventions are generally designed to improve financial literacy, making it easier for people to “read” financial markets and improve financial decision making. Such interventions can lead to changes in behavior but, somewhat unsurprisingly, tend to work best on those who are most open to being informed and educated (which tend to be the better educated). Traditional interventions may therefore serve to widen the gap between those with high and low levels and, insofar as policymakers are interested in improving the financial capability of those at the lowest levels, there will be interest in looking for interventions to augment the standard approaches.

Recent developments in behavioral theory show that changing contexts can have a powerful effect on behavior: we can change behavior by sometimes quite subtle changes to the environment or choice architecture. The third section focuses on what we consider to be the nine most robust contextual effects on behavior. It builds on a framework under the mnemonic MINDSPACE to represent nine effects on behavior operating largely on the “automatic” system: messenger, incentives, norms, defaults, salience, priming, affect, commitment, and ego (Dolan et al. [2010, 2011]). A review of the academic literature shows that all the effects have the potential to bring about changes in behavior that increase financial capability. We are not yet at the stage, however, where we can say much about the marginal impact of each effect or about the impact of different combinations of effects.

The fourth section considers some case studies from the United Kingdom. The charity FairBanking had previously undertaken systematic research into a number of current accounts, credit cards, and savings products in the United Kingdom to identify those containing features that may improve financial capability. The data were made available, and six of the new products that have an impact on financial capability-related behaviors were analyzed using the MINDSPACE framework. While the products draw on different elements of MINDSPACE, it is currently difficult to isolate the marginal effects of the different elements.

The fifth section provides some concluding remarks. It is clear that changes in the “choice architecture” (Thaler and Sunstein [2008]) can change behavior, and banks and other financial institutions are increasingly alert to the opportunities that this brings. We therefore need to conduct further research—ideally using field experiments—into the robustness of the various environmental effects on different finance-related behaviors. Alongside this research, we should establish the degree to which there is political will and public permission to change the choice architecture in particular ways. We have seen the power of defaults (changing from opt-in to opt-out) in pension plans, for example, and there is certainly scope to go much further. It would help if there were better empirical evidence and normative debate before we go too far.

CHANGING MINDS

Traditional population-wide behavior change interventions rely on using information, to provoke reflective mental processing, and as a result to change certain cognitions (beliefs) which can have a direct effect on behavioral responses. Such traditional interventions attempt to educate agents to make better informed decisions. Thus, information leads to explicit appraisals of costs/risks and benefits related to different behaviors and ultimately changes beliefs about such behaviors.

Giving out information has become a prominent part of policymakers’ toolkits, and its importance is recognized through the impact of feedback (Thaler and Sunstein [2008]), which must be salient to recipients. Almost five decades of research on whether changes in cognitions engender population-wide behavior change have been embodied in dozens of psychological theories and documented in hundreds of publications. The domains of application cover most maladaptive and problematic behaviors, which have been the focus of public policy concern. The richest cluster of models and data comprises numerous theories in social and health psychology, which assume that providing information that changes various beliefs produces intentions to change one’s behavior and these in turn affect behavior (Vlaev and Darzi [2012], Vlaev and Dolan [2009]).

The impact of education and information on behavior is consistent with the standard economic model, so the greater amount of information we have, the more likely we are to

accurately calculate the payoffs for each decision. Financial literacy is low, however, and those who benefit from education and information are usually the better educated and informed. Lusardi [2007, 2010] finds that financial illiteracy in the United States is widespread. This is especially true for young adults, those with a low education, women, African-Americans, and Hispanics. Interestingly, close to half of older workers do not know which type of pensions they have, and the large majority of workers know little about the rules governing Social Security benefits. Notwithstanding the low levels of literacy that many individuals display, however, very few rely on the help of experts or financial advisors to make saving and investment decisions (Lusardi [2010]).

The evidence from Meier and Sprenger [2008] argues that a main limit to financial literacy is people's time preferences. They analyze a field experiment, where a short, free credit counseling and information program was offered to more than 870 individuals. About 55% chose to participate. Independently, they elicited time preferences using incentivized choice experiments both for individuals who opted into the program and those who did not. They show that the two groups differ in their measured discount factors, in that individuals who choose to acquire personal financial information through the credit-counseling program discount the future less than individuals who choose not to participate; that is, impatient people do not select the help and financial education.

Although it is difficult to draw conclusions about when individuals seek advice, the research literature strongly suggests that individuals who do solicit advice are more likely to follow that advice than individuals who receive unsolicited advice. Indeed, a robust finding is that individuals who receive advice by default tend to significantly discount it (Bonaccio and Dalal [2006], Yaniv [2004a, 2004b], Yaniv and Kleinberger [2000]). While explicitly solicited advice is perceived as helpful, unsolicited advice or imposed support is perceived as intrusive, which might even lead to the wrong behaviors (Deelstra [2003], Goldsmith [2000], Goldsmith and Fitch [1997]). In a similar vein, Gino [2008] shows that individuals are significantly more receptive to advice they pay for rather than advice they get for free. This resonates with the Waber et al. [2008] study, where patients recover faster with a placebo if they know that the placebo was expensive.

Since some individuals actively choose to seek out advice, any correlations between actual behavior and advice may be the result of self-selection: individuals who are particularly prone to certain types of investing behavior may also be more likely to seek out advisors. Hackethal et al. [2009] find that self-selection largely explains their finding of better outcomes for advisees in the context of German Internet brokerage accounts. Hung and Yoong [2010] try to unpick causality by providing advice to those who ask for it and those who do not ask and compare to a standard control group. They find that unsolicited advice has no effect on investment

behavior, but when advice is optional, individuals with low financial literacy are more likely to seek it out. In spite of this negative selection on ability, individuals who actively solicit advice indeed perform better. Solicited advice does indeed appear to have more of an effect than unsolicited advice, although the magnitude of self-selection effects can overshadow actual treatment effects.

In one of the largest studies on the impacts of financial education, Bernheim and Garrett [2003] found that saving rates increase significantly with the provision of employer-based education. Employees who are offered retirement education are far more likely to participate in 401(k) programs and to make larger contributions to their plans. The effects of education are particularly pronounced among those least inclined to save; however, there is some indication that education stimulates 401(k) contributions among high savers. Using data from Merrill Lynch and a telephone survey of 3,500, the authors employ a difference-in-difference approach and assume that timing of the introduction of state-mandated financial education is exogenous. They conclude that the mandates led to a 1.5% higher saving rate.

There is, however, evidence against Bernheim and Garrett's result. Using similar US Census data, Cole and Shastry [2008] allow for the inclusion of state fixed effects to control for unobserved, time-invariant heterogeneity in savings behavior across states, as well as nonparametric identification of the treatment effect itself (rather than a linear measure of years-since-mandate-began employed by Bernheim and Garrett). Once these three enhancements are implemented, all treatment effects fall to a precisely zero. Therefore, these results cast doubt on the fact that financial literacy as implemented under this program had an effect at all.

Education and information may not be so successful because of people's beliefs about their future financial behavior. We can think about beliefs in two ways: (a) beliefs that create behaviors and (b) behaviors that create beliefs (i.e., behaviors-as-information that changes beliefs). The former is consistent with the standard economic model and the theory of planned behavior in psychology that has dominated many interventions, especially those to do with improving people's information set or education. The latter is related to cognitive dissonance (Festinger [1957]), and there are many examples of such dissonance in people's behavior. For example, Goetzmann and Peles [1997] shows that investors' choice of mutual funds tend to induce selective perception of information about the efficacy of their choice—they find that even well-informed investors tend to bias their perceptions about past performance. Such findings are related to optimism bias.

In short, financial information and education designed to change minds can change behavior but, somewhat unsurprisingly, tend to work best on those who are most open to being informed and educated (which tend to be the better educated in the first place). Recent developments in behavioral theory show that changing contexts can have a powerful effect on

TABLE 1
MINDSPACE Categories

Messenger	We are heavily influenced by who communicates information.
Incentives	Our responses to incentives are shaped by predictable mental shortcuts such as strongly avoiding losses.
Norms	We are strongly influenced by what others do.
Defaults	We ‘go with the flow’ of pre-set options.
Saliency	Our attention is drawn to what is novel and seems relevant to us.
Priming	Our acts are often influenced by sub-conscious cues.
Affect	Our emotional associations can powerfully shape our actions.
Commitments	We seek to be consistent with our public promises, and reciprocate acts.
Ego	We act in ways that make us feel better about ourselves.

behavior: we can change behavior by sometimes quite subtle changes to the environment or choice architecture. The next section focuses on what we consider to be the nine most robust contextual effects on behavior.

CHANGING CONTEXTS: MINDSPACE

The elements described in this section are those effects that, from laboratory and field research in social psychology, cognitive psychology, and behavioral economics, we consider to be the most robust effects for changing behavior that operate largely, but not exclusively, on the automatic system (see Dolan et al. [2010, 2011] for further details and for examples from nonfinancial domains). The nine effects are arranged according to the mnemonic: MINDSPACE (see Table 1).

Messenger

We are heavily influenced by who communicates information, and this effect is mediated by the reactions we have to the source of that information (Durantini et al. [2006]). In an experiment on enrolment in the Tax Deferred Account (TDA) in the United States by Duflo and Saez [2003], a random sample of employees in a subset of departments were encouraged to attend a benefits information fair organized by the university. Enrollment in the TDA 11 months after the fair was significantly higher in departments where some individuals were treated (i.e., encouraged to attend) than in departments where nobody was treated. The interpretation of this result can be messenger effects and social norm effects. The messenger effects are that friends and colleagues in the same department are telling their colleagues about the benefits of enrollment, and social norm effects operate by creating the norm of enrollment within a department.

Incentives

One of the basic laws of economics is that we respond to incentives. We can respond in standard ways consistent with

economic theory but also by using predictable mental shortcuts that can be categorized in three ways: loss aversion, hyperbolic discounting, and mental accounting.

Standard incentives

It is undoubtedly true that lowering interest rates makes people save less, spend more, and people are more likely to get into debt—these are rational responses. Gross and Souleles [2002] analyze how people respond to the supply of credit using a unique credit card dataset, and they find that increases in the limit to credit generates an immediate and significant rise in debt. In a randomized experiment with a community bank in Kenya, Dupas and Robinson [2009] provided monetary incentives of \$8.50 to open a savings account to entrepreneurs, for whom the researchers paid the fee to open the account and provide the minimum account balance (\$7 + \$1.50). The control group received no incentives but were not barred from opening an account, so the only thing that was different between the treatment and control group was the monetary incentive. The savings accounts had substantial positive impacts on investment for women but no effect for men. In addition, they found that providing the option for an account and taking the account made women less vulnerable to illness. These results maybe due to the developing world context in which their field experiment took place, but the positive impact that savings accounts have on other aspects of people’s lives, such as health, requires further investigation. Minor barriers to saving such as application costs or waiting times can also discourage participation out of proportion to the magnitude of the costs they impose (Bertrand et al [2006]).

Loss aversion

Losses loom larger than gains because we dislike losses more than we like gains of an equivalent amount (Kahneman and Tversky [1979]). Benartzi and Thaler [1995] showed that the equity premium is consistent with what loss-averse investors require to invest in stocks, provided they evaluate their portfolio performance annually. At horizons as short as a year, the likelihood that stocks underperform relative to bonds requires a substantial compensation in terms of returns, given loss aversion. At a longer horizon, the likelihood of underperformance decreases, and the implied equity premium decreases. Their model assumes that investors, when evaluating the holdings, make no distinctions between realized gains/losses and “paper” gains/losses. Investors, however, may treat the two utility carriers asymmetrically and derive utility (or disutility) only from realized gains and losses. Investors may even go as far as distancing themselves from the paper losses. For instance, Karlsson et al. [2005] show that, when the stock market is doing poorly, investors are substantially less likely to look at their holdings on the Internet.

Loss aversion has been prominent on the work of tax cuts and rebates (see Shapiro and Slemrod [1995, 2003]).

People's propensity to spend from a tax rebate is different to the spending behavior from a tax cut. It seems that about one-quarter of individuals receiving a tax rebate reported that it would lead them to increase spending. More recently, a laboratory experiment by Chambers and Spencer [2008] found that subjects were more likely to plan to spend a hypothetical tax cut delivered as many small payments rather than one delivered as a lump sum.

Furthermore, Epley et al. [2006] provide evidence that loss aversion matters to saving and spending. The authors find that tax cuts presented as a "bonus" might be more likely to be spent than tax cuts presented as a "rebate." The authors interpret this as when individuals perceive the tax cut as a gain (a "bonus") rather than as a foregone loss (a "rebate"), they are more likely to spend the tax cut, although it can also be due to loss aversion. This clearly suggests that the framing of prospects in terms of losses and gains can actively change behavior. In a similar loss aversion context from a recent study, participants were asked to deposit money into an account, which was returned to them (with a supplement) if they met weight loss targets (Volpp et al. [2008]). This proved to be an effective intervention.

Loss aversion is linked to the reference dependency of preferences. The key paper by Camerer et al. [1997] found that taxi drivers make labour supply decisions "one day at a time" instead of inter-temporally substituting labor and leisure across multiple days, and set a daily income target and quit working once they reach that target. In effect, their reference point is a daily earnings target and beyond which they are less likely to work. Farber [2008], however, suggests that this reference point can shift daily. Crawford and Meng [2009] use Koszegi and Rabin's [2006] model of targets for hours as well as income and found that stopping probabilities are significantly related to hours. Fehr and Goette [2007] support such findings using a different labor market setting.

Hyperbolic discounting

We prefer to live for today at the expense of tomorrow. We usually prefer smaller, more immediate payoffs to larger, more distant ones. Today, £10 may be preferred to £12 tomorrow. This is consistent with standard economic theory. When, as many of us will, we prefer £12 in eight days to £10 in a week's time, we are clearly exhibiting dynamic inconsistency. This set of preferences implies that we have a very high discount rate for now compared to later, but a lower discount rate for later compared to later still. This is referred to as hyperbolic discounting. Ausubel [1999] provides tentative evidence of this impatience with credit card offers using a credit card company. Preintroductory and the postintroductory interest rates were randomized across the sample. Ausubel found that consumers are at least three times as responsive to changes in the introductory interest rate as compared to dollar-equivalent changes in the postintroductory interest rate. The extent to which this is

explained by hyperbolic discounting as opposed to simple impatience requires further investigation.

Mental accounting

We mentally allocate money to discrete bundles. We think of money as sitting in different "mental accounts," that is, salary, savings, expenses, and so forth. Spending is constrained by the amount sitting in different accounts, and we are reluctant to move money between such accounts (Thaler [1999]). This means that accounts may encourage people to save or spend money by explicitly "labeling" accounts for them but still leaving freedom to choose how the money is used. Mental accounting means that identical incentives vary in their impact according to the context: people are willing to take a trip to save £5 off a £15 radio but not to save £5 off a refrigerator costing £210 (Thaler [1985]).

Barr [2004] describes the Puerto Rican Banco Popular's Acceso Popular account, which has a \$1 monthly fee, no minimum balance, free ATM transactions, and free electronic and telephone bill payment. To encourage savings, Acceso Popular has a savings account into which small sums (initially, \$5 per month) are automatically transferred from the Acceso Popular transaction account. The savings account pays modest interest. Funds may only be withdrawn by going to the bank, and account holders must pay a fee to see a bank teller more than once a month to discourage withdrawals. Banco Popular opened nearly 60,000 such accounts in 2001, with half of those activating the savings "mental" account in their accounts.

One recent policy innovation to encourage this behavior has been the advent of federal tax split refunds in the United States. Since 2007 individuals have been able to split their refunds across multiple accounts, including savings accounts and IRAs (Karlán and Morduch [2010]). Evidence suggests that this policy might work to encourage saving (Beverly et al. [2006])—their pilot study suggests there is demand among low-income people for a refund-splitting program that supports asset building. Karlán and Morduch [2010] argue that eliminating cash-in-hand, direct deposit naturally reinforces the good default situation. Interestingly, Abeler and Marklein [2008] found that people with lower mathematical abilities are more likely to violate fungibility. Changing the interpretation of accounts might be helpful in changing people's behavior in this instance for people who are less or well educated.

Norms

We tend to do what those around us are already doing. Social and cultural norms are the behavioral expectations, or rules, within a society or group (Bicchieri [2006]). Norms can be explicitly stated or implicit in observed behavior. People often take their understanding of social norms from the behavior of others. Some social norms have a powerful automatic effect on behavior (e.g., buying on credit, being quiet in a library) and can influence actions in positive and negative

ways. Duflo and Saez [2003] show how norms operate in the context of enrollment into the Tax Deferred retirement Account (TDA): the financial behavior of work colleagues affects the decision about whether or not to enroll. Most of the examples of the powerful effects of norms come from outside of the financial domain.

In a novel study of the effect of norms and peer groups, Karlan [2007] tested whether better-connected groups perform better in terms of loan repayments and savings in Peru, where banks lend to groups rather than individuals. He finds that stronger social connections of the group lead to higher repayment and savings. For instance, a movement from the 25th percentile to the 75th percentile in the average spatial distance to others in the group implies an increase of \$13.20 in savings per client in their first 4-month loan cycle—this is 22% of the average savings rate.

Defaults

Defaults are the options that are preselected if an individual does not make an active choice. The best examples of defaults have come from financial behavior. Madrian and Shea [2001] consider the effect of a change in a default on the contribution rates in retirement savings in the United States. Before the change, the default is nonparticipation in retirement savings; after the change, the default is participation at 3% in a money market fund. In both cases, employees can override the default so it remains libertarian. Madrian and Shea [2001] find that the change in default has a significant impact: one year after joining the company, the participation rate in 401(k)s is 86% for the treatment group and 49% for the control group. Choi et al. [2004] extend the Madrian and Shea findings to show that they are generalizable to six companies in different industries with remarkably similar effect sizes.

In a further study, Cronqvist and Thaler [2004] examine the choice of retirement funds in Sweden after the privatization of social security. They find that 43% of new participants choose the default plan despite the fact that the government encouraged individual choice and despite the availability of 456 plans. Three years later, after the end of the advertisement campaign encouraging individual choice, the proportion choosing the default plan increased to 92%. Overall, the finding of large default effects is one of the most robust results in the applied economics literature over the last 10 years (DellaVigna [2009]). This makes a change in defaults as one option open for policymakers to change financial behavior.

Salience

Our behavior is greatly influenced by what attracts our attention (Ariely et al. [2003], Kahneman and Thaler [2006]). In our everyday lives, we are currently engaged with a range of stimuli, but we tend to unconsciously filter out much irrelevant, redundant, and familiar information. People have limited attention span, and financial choice is affected by

anything that falls within this focus. In this respect, the popular term “paying attention” properly epitomizes this mental property—we must “pay for it” by not attending to something else. Simplifying the information in choice environments; for example, by making the most relevant information salient, is therefore necessary, because complexity (e.g., having many options to choose from, having many pieces of information to take into account) and the subsequent confusion may lead people to inaction or wrong choices. As a neat example of where attention is directed, Hossain and Morgan [2006] provide evidence from an online auction that people respond too much to the sales price and too little to the postage and packing price.

Evidence suggests that salience matters to behavior related to taxation. In the case of commodity taxes, research has shown that some taxes are somewhat ignored by consumers, especially in the short run. Chetty et al. [2009] show how individuals largely ignore taxes that are not ordinarily included in marked prices. In the case of taxes on labor, emerging evidence finds that the behavioral response to income taxes is also muted by their complexity. Saez et al. [2009] finds little evidence that taxpayers bunch at kink points in the income tax schedule, a result consistent with imperfectly rational taxpayers failing to fully understand the tax code. The framing and salience of tax cuts can affect whether and when they are spent. The results of experimental work documented earlier by Epley et al. [2006] provide the primary piece of evidence that this is the case. The authors find that tax cuts presented as “bonus” might be more likely to be spent than tax cuts presented as a “rebate.” Salience has caused individuals to focus their attention on either the bonus or rebate.

Brown et al. [2008a] hypothesize that when consumers think in terms of consumption, annuities are viewed as valuable insurance, whereas when consumers think in terms of investment risk and return, the annuity becomes a risky asset because the payoffs depends on an uncertain date of death. Brown et al. [2008a] randomized frames to a group of individuals 50 years old and over and found that the vast majority of individuals prefer an annuity over alternative products when the question is framed in terms of consumption, while the majority of individuals prefer nonannuitized products when the questions are presented in terms of risk and return. Brown et al. [2008b] demonstrate that this result is not dependent on the initial purchase price.

Priming

Priming explains that people’s subsequent behavior may be altered if they are first exposed to (primed by) certain stimuli such as words, sights, or sensations (and these effects are real and robust). Priming has the potential to change financial behavior in the field, but we do not know enough about the sustainability for priming to change long-term behavior. One small-scale experiment is that of Stewart [2009], who uses the same anchoring approach that was

made infamous by Ariely et al. [2003] and Tversky and Kahneman [1974]. Stewart uses the anchoring approach to minimum repayments on hypothetical credit card debt. He finds that the minimum-repayment information anchors the size of hypothetical repayments. Interestingly, Feinberg [1986] found that being primed with a credit card makes you more likely to spend more on a good, and spend quicker. Prelec and Simester [2001] auctioned sports tickets off to MBA students, where one condition was payment by credit card and the other condition was paying by cash. They found that when payment was by credit card, the average bid was 60–110% higher than the cash bid.

Affect

Affect (the act of experiencing emotion) is a powerful force in decision making. Emotional responses to words, images, and events can be rapid and automatic, so that people can experience a behavioral reaction before they realize what they are reacting to (Zajonc [1980]). Some studies have examined the link between emotions and financial decision making directly. In Landry et al. [2006], in a door-to-door marketing of a fundraising appeal, the authors found that the physical attractiveness of the door-to-door salespeople was far more important than the lottery that was being offered. They found that a one-standard deviation increase in physical attractiveness among women solicitors increases the average contributions by 50–135%. Similarly, in a developing country setting, Bertrand et al. [2010] find that adding a photo of a woman to a direct mail solicitation increases the likelihood of borrowing by just as much as dropping the interest rate by about 30%, for both men and women alike.

Commitments

Individuals tend to procrastinate and delay taking decisions that are likely to be in their long-term interests (O'Donoghue and Rabin [1999]). Many people are aware of their willpower weaknesses (such as a tendency to overspend) and use commitment devices to achieve long-term goals. Ashraf et al. [2006] analyze the demand for illiquid savings as a commitment device. They offer an account with a commitment device to 842 randomly determined households in the Philippines with a preexistent bank account. Access to funds in these accounts is constrained to reaching a self-specified savings goal or a self-specified time period. A control group of 466 households from the same sample is offered a verbal encouragement to save but no commitment. In the treatment group, 202 of 842 households take up the commitment savings product. In the 842 treatment households, savings in the bank after six months are significantly more likely to increase compared with the 466 control households that received a pure encouragement. Average balances increased 80% after 12 months and this handed a greater power in financial decision making to women.

Thaler and Benartzi's [2004] Save More Tomorrow (SMT) scheme enabled employees to commit a portion of their future salary increases toward retirement savings. They found that 78% joined from those who were offered SMT; 80% of that 78% remained in program through the fourth raise; and importantly, the average savings rate increased from 3.5% to 13.6% over 40 months. This SMT effect is large and has the potential to change financial decision making. Why does precommitment work so well? It relates to hyperbolic discounting in that it makes future decisions in the present frame, otherwise people procrastinate and go with the status quo.

A question remains, however, to what extent such commitments are about binding one's behavior, or are in fact merely about creating structure (Karlan and Morduch [2010]), and the distinction could be relevant for policy design. Karlan et al. [2009] test the effects of simply making savings more salient by sending clients simple reminders to make deposits. They find even with no commitment, the reminders can be successful in increasing savings rates (by 6%) and helping clients meet savings goals (a 3% increase in the likelihood of reaching one's goal). Similar positive impacts on savings were found by a deposit collection services tested in Ashraf et al. [2006a] and Dupas and Robinson [2009]. Further research would be welcome on whether actually the individual signing to commit would have different effect sizes than having individuals not signing the commitment.

Ego

Evidence shows that humans do behave in a way that supports the impression of a positive and consistent self-image. When we are doing well, we attribute it to ourselves; when we do badly, we blame other people or the situation we were in—an effect known as the “fundamental attribution error” (Miller and Ross [1975]). Benartzi [2001] provides field evidence of overinference and/or self-image protection, where the likelihood of employees investing in employer stock depends strongly on the past performance of the stock. In companies in the bottom quintile of performance in the past 10 years, 10% of employee savings are allocated to employer stock compared with 40% for companies in the top quintile. This difference does not reflect information about future returns. Companies with a higher fraction of employees investing in employer stock underperform over the next year relative to companies with a lower fraction.

Barber et al. (forthcoming) use data on individual trades to show that individual U.S. investors purchase stocks with high past returns, also consistent with overinference. The average stock that individual investors purchase outperformed the stock market in the previous three years by more than 60%. Adkins and Ozanne [2005] discuss the impact of a low literacy identity on consumers' behavior and argue that when low literacy consumers accept the low literacy stigma, they perceive market interactions as more risky, engage in

less extended problem solving, limit their social exposure, and experience greater stress. In one study, low SES students performed worse than high SES students when the test was presented as a measure of intellectual ability, but performance was comparable when the test was not seen as pertaining to intellectual measures (Croizet and Claire [1998]).

This review has shown that all the elements of MINDSPACE have the potential to bring about changes in behavior that increase financial capability. Next, we demonstrate how some of these principles have been already applied in the real world and at least how they can help us understand why some financial products have gained popularity—and also increased financial capability—among consumers.

CHANGING BEHAVIOR WITH NEW FINANCIAL PRODUCTS

Much of the evidence above is derived from small experiments or researcher-led experiments in the field. There has been much less discussion about to the extent to which some of these effects have been privately led and used in the international banking system. We therefore now discuss how financial products in the United Kingdom have been designed based on some of the principles of MINDSPACE. The charity The FairBanking Foundation had undertaken systematic research into all current accounts, credit cards, and savings products in the United Kingdom in order to identify those containing features that may improve financial capability. The data were made available, and six of the products that were having an effect on behavior were analysed from the MINDSPACE perspective. The products were chosen for case studies based on having the highest rating of features designed to impact financial capability. The products are clearly influencing behavior through a combination of interventions. It is not known exactly which aspects are the primary interventions, although some of the interventions are likely to be critical to the behavior change that is occurring.

Six products are analyzed from five financial services providers, and each is analyzed as a pair of products below. Interviews were conducted with each provider to identify key aspects of the product design and to gain a greater understanding of how they were being used by customers. All six products are new to the market during the year before the interviews (i.e., launched during the course of 2009). The institutions that have undertaken the product development work to bring the products to market are motivated by trying to provide profitable products that help improve financial capability. We focus on behaviors related to making ends meet (keeping up with bills, not running out of money at the end of the month), keeping track of finances (knows bank balance, checks receipts) and planning ahead (provision for unexpected expenditure and for retirement).

Making ends meet interventions

These two products can be helpful for those with financial problems. Secure Trust Bank (STB) has developed the “pre-paid current account,” which is primarily for households that have approached a debt management company but need a current account that will help with managing their money. The product is based on research into the needs of those that are coming out of a financial crisis. The product from Royal Bank of Scotland/NatWest, called “Money Manager,” is designed to help customers facing a deteriorating financial situation with expenditure exceeding income and a high probability of the need for debt counseling unless a change in financial behavior takes place.

Both products are types of bank account(s) that encourage a customer to think of their money in “pots” or “jam jars.” The STB product encourages customer to think of their money in two pots. Regular income is paid into one pot called “Account” from which bills are paid. There is a separate pot called “Card,” which can easily be loaded. It is the Card that is used by the customer for all other expenditure. The card can be loaded monthly, weekly, or on a one-off basis as required. Money can be transferred between accounts entirely at the discretion of the customer. It is not possible to go overdrawn on either the Account or the Card. Customers appreciate that it is better to stop a direct debit rather than allow it and incur overdraft charges. It is the responsibility of the customer to reinstate the direct debit and there is no charge for bouncing the payment. The type of customer taking this account does not accumulate savings.

The RBS/NatWest proposition has three separate accounts or pots (Bill, Spend, and Save). The Bills pot is established at set-up with regular income being received (potentially with an overdraft) and an amount allocated for payment of bills. Further Spend and Save accounts are set up if needed. A mandatory standing order is set to the Spend pot, and an optional standing order goes to the Save pot. There is a Safety Net transfer from the Spend pot if there is a shortfall in the Bills pot when a payment needs to be made. An optional Regular Sweep is also available so that money remaining in the Spend pot at the end of the month is transferred to the Save pot.

Secure Trust Bank (Prepaid Current Account)—this product is new and is narrowly focused at present on those that have had serious financial problems and approached debt management companies. It appears complicated when first explained, but all detail is now handled at a welcome interview (phonecall) and this has resolved all matters of customer confusion. Existing customers spend all the income going onto the account given their financial situation, so it is not a route to acquire savings.

RBS/NatWest (Money Manager)—helps customers that are approaching serious financial difficulty. The evidence was that in a six month period, it reduced overdrafts by almost 50%, and the average savings balance increased from

nothing to more than 15% of the average overdraft at the outset, with a large variation in the outcome. A wide range of income and demographic groups are users of the product. The common factor is the attitudinal approaches or situation of the customers that needed to be offered the account. This can be summarised as groups such as “spend all” and “spend without understanding.”

Described as a “tool for the job” (these products are designed to help people manage their money in such a way that they can live within their means, that is, making ends meet. Also, both products encourage active monitoring of the account balances, that is, keeping track. Finally, this is really short-term planning (month to month), but some customers with Money Manager have managed to save up for items, such as holidays rather than incur more debt, that is, planning ahead.

Although the accounts analysed here are designed for customers that have had serious financial problems or appear to be moving towards them, there is reason to believe that many customers would benefit from interventions that encourage them to think of their money in this way. The evidence for this is that overdrafts/debts are reduced, savings increased and that there is a lower probability of incurring unexpected bank charges (no unexpected charges with STB). The hypothesis is that the interventions are increasing the financial capability of the customers that use these products by helping them live within their means. It will also be increasing the likelihood of being able to keep track and there is likely to be an improvement in planning ahead in the short term. Each intervention described below is likely to be having an impact by encouraging the customer to live within their means.

First, *messenger*: For one of the accounts analyzed the messenger who recommends the account is a debt management company. The customer trusts this entity with helping them out of a financial crisis. In the other case, the customer is being contacted by the bank and offered the account, as there are signs of financial distress. An approach to the customer is made by specifically trained staff encouraging the customer to take up this proposition. Given the evidence of the importance of messengers it is highly likely that this is having an impact in terms of encouraging customers to open this type of account.

Second, *defaults*: These products are designed to work in a certain way by dividing money into at least two pots, one for regular bills and one for other expenditure. In one case, there is also a savings pot. The default position at set up is that the customer will use the propositions in this way. From the outset, the customer is encouraged to divide his or her expenditure into at least two categories. There are methods used by the banks to encourage the customer to use the account in this way, which involve bank staff guiding customers by explaining the way in which the account “should” be used. For one of the accounts, the customer will be contacted to receive support if there is evidence that they are struggling with the accounts, for example canceling the standing order

from the Bill pot to the Spend pot. The result of the default approach is highly effective in terms of helping many customers that would otherwise struggle both to make ends meet and to keep track of their finances.

Third, *incentive (Mental accounting)*: The default has assisted the customer in creating the pots, but having done so the approach acts as an incentive to keep money allocated for different purposes. Most customers will not go to the Bills pot to fund other expenditure. The evidence for this lies in the fact that customers find it a useful way of making ends meet and even to begin to build savings. Fourth, *priming*: the initial interaction with the bank staff seems to be important. The message is that this approach will help the customer manage his or her day-to-day finances. There is a theme of *growing financially* whether this is by reducing debt or growing savings. Putting the customer in control is a strong message that has direct appeal and is likely to be influencing the customer in terms of adopting the proposition and using it as intended. A further theme that may be more related to ego is that the user of the account is receiving a message that they are somebody that really needs to take more control of their finances.

Fifth, *commitment*: In the set-up process the customer is helped by bank staff to identify the amount required for regular bills. The customer makes a commitment to set aside this amount as it is put in the Bills pot and only the remainder is available for other spending. This process not only establishes the commitment, but also ensures that it is realistic. One component is that in creating the Bills pot it establishes a goal for debt reduction with regular payments to meet that goal.

Keeping track interventions

The two products considered here are different other than that both include the development of pots for managing expenses. There is really a set of 3 products from O₂ (a mobile telephone company, offering banking services) used by different groups of customers to enable a single pot to be established with near-instant feedback on utilisation. Barclaycard (a credit card company) is enabling expenditure categorisation on both a broad and detailed range of categories. The O₂ products are designed to assist customers achieve a greater sense of control and provide a flexible payment method. Barclaycard are providing a service without a behavior change intention, and so it will be necessary to perform some analysis in order to identify how the service has changed the behavior of customers choosing to use it.

The O₂ products are a range of prepayment cards that are loaded either with cash or from a current account of the customer. Each time a card is used a text is sent to the mobile phone of the user. The text will be received almost immediately, providing near-instant feedback. For example, the text will arrive before the till receipt for transactions in a shop. “Cash Manager” comes in two forms. The “verified” card has a higher annual load limit and can be loaded from an account and by way of a regular weekly or monthly load,

not by cash. The “unverified” card can only be loaded from a current account with single amounts. “Load & Go” has the same load limits as the unverified prepayment card and can be loaded by cash at a variety of locations as well as from a current account. The account loading allows relatives and friends to load the card.

Barclaycard has developed a feature as part of its on-line “mybarclaycard” service that allows customers to analyze expenditures by category (e.g., groceries, automotive) and create their own categories. Comparison over time shows which week in the month the expenditure has occurred. The service allows customers to search and display their transactions by retailer, category, and over time (week by week in a month) for up to 13 months. At present, month on month or any other period of comparison is not available.

General observations from O₂ were as follows. The product is enabling “self-regulating behavior, like a diet club. By signing up to it you make yourself mentally aware. One person is not good with cash, keeps raiding the cash point, so actually what he does now is load up the money for the month and then raids the cash point from this stack of money. Another just uses it for travel, even if he goes spending, he knows he can still get to work.” The website for O₂ contains a budgeting tool, which is fairly basic and cannot be saved. On the whole it is not being used. The customers appear to have worked out some form of budget elsewhere and are going to spend £x amount this month on the card. They do not appear to do a detailed budget but decide to use the card to control a specific category or group of expenditures. The keeping track is a “mental leap that it is more for a purpose,” so budget defined in that area, so used as “habit card.” Some people refer to it as this or a “guilty pleasures card.”

Barclaycard does not have any demographic breakdown of the users of its expense management tool. However, it is one of the most popular parts of its on-line services. The customers are using the expense management feature to see how they are spending their money by category of spend (e.g., groceries) and then looking at the individual retailers in each category (e.g., specific supermarket), using the “filter & search” tool to find specific transactions, creating their own personal categories and then associating particular transactions to these categories.

Keeping track is the primary purpose of the O₂ card and the following comments give a sense of how their customers are using it. “Every user could write a label as to why they use the card; a purpose. Twitter shows what using for. Range of spend is so wide.” Customers expect to spend the money and have a clear intention to use full balance. It is a tool that the customer can use to help keep track of his or her money.

For Barclaycard, keeping track is the purpose of this feature as it is providing information on expenses with considerable detail and the ability for the customer to tailor the tool to reflect an individual spending profile. The interventions that may be working as part of the Barclaycard tool are unclear at present. It is a relatively new feature and the provider has

not conducted research into how customers are using it and indeed whether it will become a source of greater financial capability. It has the potential to be a rich source of understanding as to how groups of customers want to manage their money when given a new way to do so.

Our hypothesis is that the following interventions are or are likely to be a key in enabling users of the products to keep track of their finances better and thereby improve financial capability. First, *messenger*: The products offered by a mobile phone company are an example of a non-financial services brand offering a financial service. For two-thirds of the customers the importance of the messenger is that they are existing customers. For the teenage/young customers it is that the messenger is not their parents and not a financial institution. For this group of customers the messenger may be high impact in terms of the likelihood of taking the product and using it as a control tool to keep on track.

Second, *salience*: All the products are providing extensive feedback to customers. O₂ gives the instantaneous text message just after a purchase has been made. The customer knows immediately how much is left on the card and can access the information at any time. For the pot that the customer is using the feedback could hardly be improved. The Barclaycard tool has enormous scope provided customers do not find it too difficult to set-up the information. They could focus on just one expenditure category or a combination. Simply providing the information may not be sufficient to have affected behavior, however, for some customers they may choose to concentrate expenditure through the card in order to be able to track them more easily. It is hoped that further insights will be obtained once data have been analyzed on customer behavior.

Third, *priming*: the messages surrounding the launch of the O₂ products are “never overspend” and “help you manage your money.” It is clearly saying that it is more than a cheap way to be able to make purchases (e.g., over the Internet). It is difficult to know the effect of the priming, but it is likely to have an effect on customer attitudes to the product and provides differentiation with other prepayment cards. This priming may be linked with ego in that it is encouraging people to reconsider how they view their money management capabilities and see themselves as somebody needing to have more control.

Fourth, *commitment*: customers use the O₂ products as a tool to control spending. Money is loaded onto the card and is spent over a period of time. Most customers have an implicit goal not to spend more than the amount loaded onto the card either over a period of time or on a certain type of expenditure. The load could be intended for use over a month or week; alternatively it may only be used on petrol or coffee. One group of customers is permitted to have a weekly or monthly load from a current account. This regular commitment is popular and normally started shortly after the account has been set up. The large take-up of customers using the card in this way indicates the demand for control-type tools exists.

Planning ahead interventions

There are two similar products provided by Saffron Building Society (“Goal Saver”) and RBS/NatWest (“Your Saving Goals”) that are designed to encourage customers to plan ahead by saving up for different purposes. Both products are the result of research by the providers concerned and contain examples of behavioural interventions. And both products enable customer to set a goal for a specific purpose. Over a certain timeframe through a combination of existing savings and accumulating further savings the goal can be reached. Both products encourage the customer to make payments by standing order and/or direct debit into a savings account. The goal can be personalised with an image and/or a name. Assistance is provided in calculating the amount required to be saved. Feedback is provided on progress and customers are warned if they are not going to meet their goal with a possible solution in terms of an increased amount of saving.

According to Saffron Building Society (Saffron), the intervention is for people getting married and others who are saving for many purposes, including a rainy day or emergency. Many of the purposes are life events such as wedding, house deposit, education, major purchases (e.g., car), and gap year. For the specifically designed wedding version of the product, it turns out to be the groom and family/parents that are more interested in finances than the bride. A comment from the provider was that “we found this to be a behavioral category almost separate from any of the other main ways of categorising customer groups.” There is a wide range of amounts and types of savings goal. The wide variety of customers appears to have “a behavioral desire in common.” In general, it was identified that many people act impulsively, but need to plan when buying a sizeable purchase. The provider is a building society that tends to have customers from the ABC group who are more conservative and are more likely to make informed choices and plan.

The average amount of saving in this account-type is significantly higher than that contained in comparable savings accounts. This applies to both internet and branch-based accounts. The provider concerned has seen significant growth in the branch based accounts, so the average balance being higher is likely to reflect the interventions contained in the product that encourage saving for a specific purpose. Some of the increase would be explained by a slightly more competitive interest rate, but the differential is not great and is not enough to be a best-buy.

According to RBS/NatWest, there has been very large take-up of their product since it was launched. Such younger working groups with the attitudes of “finding their way,” “moving on up,” and “spending today” are particular segments that find the product/tool an attractive way of committing to a savings plan. It is particularly noteworthy that the “spending today” group have a far higher take-up of this product than of savings products in general. The product is appealing to customers that were previously regarded as dis-

engaged in savings. RBS/NatWest is also consciously trying to help customers consider their short, medium and long-term goals rather than saving for the sake of it or not saving at all.

Both products are similar and the following comments from Saffron indicate the research that led to creating them in order to help customers plan ahead. “All of the research said we plan better, save better when there is motivation and something that we actually know that we want that we cannot buy now. I have got to do some planning for it. Most of the motivation for people to manage their finances is so that something does not happen. We are much more motivated when it is about something happening” (Saffron).

Our hypothesis is that the following interventions are or are likely to be a key to an increase in the financial capability of planning ahead. First, *messenger*: in the case of existing customers of the institution the messenger is the bank/building society itself. For many people, the bank is a trusted source and this will be an encouragement to take action. In the example of the account for a specific goal (wedding), the magazine that acts as the messenger is a trusted source and is likely to have a higher level of impact. When the messenger is linked to the goal, this adds a degree of salience that may change the outcome in terms of the likelihood of action being taken.

Second, *incentives (mental accounting)*: The allocating of money to a “pot,” that is, giving it a label creates a disincentive to use it for some other purpose. In the specific context it may give a greater sense of ownership of the money; that is, the customer has determined how the money is divided rather than the bank. This negative incentive appears to also work in relation to making provision for the unexpected. Many customers create a pot such as “rainy day fund,” which does not have a specified use. It could be valuable to do further research on how the customer establishes the appropriate size of such a pot.

Third, *defaults*: The account is designed to be a smooth process that leads from setting a goal to creating a standing order/direct debit for a regular payment. The default is that a regular payment is set-up at the time of opening the account and the evidence is that this is effective in significantly increasing the number of customers that do this. Fourth, *salience*: These accounts provide feedback on progress toward meeting the goal. Importantly, they make it easy for a customer to identify the corrective action required if they are falling behind. The feedback does not allow for considering the overall appropriateness of the savings goal in the context of the customers financial position. For example, it is important that the mental accounting incentive provided by the pot does not mean that the salient feedback results in savings increasing congruent with an increase in debt.

Fifth, *affect*: The emotional appeal of being able to include a photograph of the object of the savings plan and to label the savings goal specifically is likely to be improving commitment. Further research would be required to identify how significant this was in increasing the likelihood of the savings

target being achieved compared with an account that does not have these features. Sixth, *commitment*: Two key forms of commitment are the setting of a goal and the commitment to a regular payment. This may be by standing order/direct debit or by making a regular transfer to the account. The evidence is very strong that this will affect behavior and make it more likely that a person manages to save. In particular, it will assist with overcoming procrastination. It is of interest that customers establish goals for pots such as rainy day and emergency fund that do not have a specified use. In order to set a goal the customer must have a number in mind. There appears to be an item of potential expenditure that is salient to the person and the goal setting triggers a consideration of it. For example, customers refer to the need to have sufficient to cover the cost of the central heating breaking down.

Summary of the Case Studies

In almost all cases more than one intervention was being used, making it difficult to identify the most significant cause of the behavior change that was occurring. In these examples, the hypothesis is that a combination of MINDSPACE elements is being used as the intervention. Messenger, Defaults, Salience and Commitments are evident from the analysis. It would be necessary to carry out further experiments to identify precisely which tool or combination is having the strongest effect. It would appear that Defaults and Commitments are being used particularly successfully in five of the six products in order to achieve the desired outcome. Priming and Affect may be important components, but it is difficult to know how significant the results of these interventions may be without them being separated from the others. The academic literature demonstrates that these interventions can cause material change in behavior.

Financial services providers have some products that are successfully using these intervention tools to alter customer behavior in the most important areas of financial capability. Given that financial capability can be improved with various behavioural interventions, the main obstacles to a significant expansion of availability to people in the UK are practical rather than theoretical.

DISCUSSION

We identify two reasons why new models of behavior change are needed in general, and in consumer finance in particular. First, existing theories and methods (including education and policy) leave a substantial proportion of the variance in behavior, beyond the effect of rational (conscious) intentions, to be explained (Sheeran [2002], Webb and Sheeran [2006]). Second, there has been recent accumulation of evidence, particularly in behavioral economics but also in social and cognitive psychology, that human decisions are susceptible to various subtle changes in the environment (Ariely [2008],

Thaler and Sunstein [2008]). Traditional approaches to behavior change in finance have not yet fully integrated this evidence, even though it potentially improves population wide financial capability. Failing to take this evidence into account also threatens the success of policies encouraging individuals to take personal responsibility for their financial affairs.

This article combines evidence from academic research and case studies to demonstrate that it is possible to change the environment in which decisions are taken in such a way as to create financial capability. We have reviewed the academic literature to highlight behavior change interventions in the financial domain that draw on elements of MINDSPACE, as well as on more traditional education and information interventions designed to change behavior through changing minds. Six examples of products were identified where a provider was having an effect on financial capability through its services. The providers were impacting key elements of financial capability relating to “keeping track,” “making ends meet,” and “planning ahead.” There would appear to be significant scope for further development of products of the type analysed here that would contribute towards financial capability.

It is reasonable to conclude that there is scope to alter the environment in a way that encourages greater levels of financial capability. This process is at a relatively early stage, but there is significant opportunity for well-structured research leading to interventions being implemented and evaluated to ensure that the desired creation of financial capability is taking place. In contrast to education and basic information, the MINDSPACE framework offers the potential to change financial behavior and reduce inequality at the same time, because the people most receptive to education will be the well-educated members of society. In contrast, interventions based on automatic system are more likely to have universal effect across populations from different socio-demographic background.

There are a few caveats here that offer future research opportunities. First, some of the evidence on financial decisions is derived from the laboratory as opposed to the field. So it would be interesting to see how this area develops with a greater amount of field evidence. Second, a great deal of the evidence comes from the developing world, mainly because field experiments have become very popular in development economics (Duflo and Kremer [2005]). So, further research would be welcome in the developed world, especially with respect to field evidence in the United States and United Kingdom. On particular areas, there needs to be further work on the impact of messenger, priming, norms and ego in financial decision-making. Third, the most effective behavior change interventions will combine changing minds with changing contexts, and combine different elements of MINDSPACE.

We are not yet at the stage where we know the marginal effects of different elements in combination with other elements. So we need to field test different combinations of effects. A greater focus on the automatic system suggests

that it may be more effective to identify an intervention that may be effective and conduct an experiment with a broad population group. This is likely to lead to a significant breakthrough in fields such as social and commercial marketing (e.g., defaults appear to work irrespectively of characteristics of the target population). This approach contrasts with traditional segmentation analysis based on studying a small population groups in depth before determining an appropriate intervention.

We recognize that the most effective and sustainable changes in behavior will come from the successful integration of cultural, regulatory and individual change—drunk driving demonstrates how stiff penalties, good advertising and shifting social norms all combined to change behavior quite significantly over a couple of decades (Yanovitsky and Bennett [1999]). We certainly need to better integrate changing cognitions and improving financial literacy with changing contexts that may directly lead to improved financial capability. This paper suggests that further experimentation could lead to significant improvement in the choice architecture of the financial services industry through changes in the way that financial services products are developed.

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