# BORN TO SPEND?

## How nature and nurture impact spending and borrowing habits

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# CONTENTS

# EXECUTIVE SUMMARY

## Is it nature or is it nurture that matters when it comes to developing spending and borrowing habits? And why does it matter?

Many people have poor spending and borrowing habits, but what is the reason? Is it because they are genetically predisposed to make bad financial decisions or is it because they have poor financial literacy due to ineffective education? It is the classic "nature vs. nurture" question and, unsurprisingly, the answer is "it's complicated." Understanding what drives our financial behavior is important because we know that strong financial literacy and good spending and borrowing habits are closely linked. This paper explains the roles nature and nurture play when people make financial decisions. It also suggests steps that we can take to increase the level of mindful spending and borrowing.

## How our brains make financial decisions.

There is evidence that nature plays the same role in financial decision-making, as it does in athletic ability. However, through smart nurturing, we can encourage people to make better choices when it comes to their money. Most decisions, including decisions about spending and borrowing, feature a combination of our habitual instincts known as fast thinking, and our purposeful and strategic thought processes utilized to override habits known as slow thinking. As with other habits, like smoking or overeating, it is difficult to overcome our fast thinking instincts, because our brains are hard-wired to resist the acceptance of immediate pain and the delay of gratification.

The way our brains make decisions can be equated to a human rider atop an elephant. The elephant represents our habitual, fast thinking processes – things like walking, breathing, brushing our teeth, taking care of simple chores. The elephant is strong yet difficult to control. The rider on the other hand represents our "strategic" processes – activities like planning, list making, and other deliberate efforts to overcome our instincts. Often, people try to guide their behavior relying on rules of thumb, known as heuristics. However, our own biases lead to misjudgments often and put us on the wrong paths. The question we all wish to answer is: How do we overcome natural instincts and our habits to successfully equip our riders with skills to point their elephants in the right direction?

## Why the traditional approach to financial literacy is not working.

Traditional financial education has largely been ineffective in increasing our degree of financial literacy. The Jump$tart Survey, which is administered every two years as a test to a stratified, random national sample of 12$^{th}$ grade students, demonstrates the lack of progress being made. The survey revealed that students who took a high school class aimed at improving financial literacy fared no better on the Jump$tart test than those who did not take a class.

Though some people are more inclined to make better financial decisions based on their genes (like people who are naturally talented athletes), there are ways to train the brain into making smart spending and borrowing decisions. Current financial education does not take into consideration the importance of psychology and the knowledge of how our brains make decisions.

## Smart nurturing and how we can overcome poor spending and borrowing habits.

The key to better financial literacy involves two tasks. The first is identifying what motivates us. The second is designing programs that help people develop and maintain strong spending and borrowing patterns. Here are three ways to accomplish these tasks:

- **Design smart nurturing programs** that help people carry out the basics of managing spending and borrowing. Recent programs such as Save More Tomorrow (SMT) and Borrow Less Tomorrow (BLT) are examples of efforts using psychology to motivate people to make good decisions. Smart nurturing programs like these can involve easy motivators such as setting goals, developing budgets, tracking expenses, identifying ways to increase income, choosing appropriate lenders, matching a person's credit cards to their specific needs and paying balances down intelligently.
- **Use modern technology**, specifically personal financial management tools, to provide people with their spending data in a straightforward way that helps them acquire better habits. Collecting spending data can help consumers recognize spending patterns and correct bad behavior before it gets out of control.
- **Turn finances into fun** by using games to help instill better spending and borrowing habits in children, particularly during the K-12 years. Electronic games motivate students' competitive instincts and activate the reward centers of their brains, all of which facilitate teaching them about mindful spending. The Jump$tart Survey showed the most effective classroom education was the stock market game. Why? Because it is interactive, contemporary, and fun. This presents an opportunity to introduce games into curriculum so that positive financial behavior becomes ingrained from the start.

## Who must take action?

There is a high cost to bad financial decision making, which is why we need a collective effort to improve financial literacy. The private sector and the public sector, members of the media, educators, and individuals themselves can all play a role in improving financial practices.

- Private sector firms, especially those in the financial sector, can harness innovations that help people make better decisions about their spending and borrowing. Financial service firms interact directly with consumers on a continuous basis, use technology extensively, and maintain repositories of data that make it possible to offer customized advice.
- The public sector can offer leadership by emphasizing the importance of improving financial behavior and financial capability. Our elected leaders can promote policy changes and generate publicity around improving financial behavior and financial literacy. The public sector can create centralized websites that provide users with techniques for managing their finances.
- Members of the media can look for interesting ways to attract attention to the importance of improving financial behavior and innovative ways to spend and borrow mindfully.
- Educators can use games in the classroom to teach financial concepts in order to engage in smart nurturing. Moreover, as financial service firms and public sector entities successfully use smart nurturing techniques, educators can import the lessons learned into the classroom.

## We have the tools to improve financial capability.

The existing efforts to promote sound financial decision-making, while well-intentioned, have not kept pace with what psychologists, economists and others know about how the human mind works. Now is the time to use this knowledge for a collaborative approach across public and private sectors to instill mindful spending and borrowing habits in our classrooms and beyond.

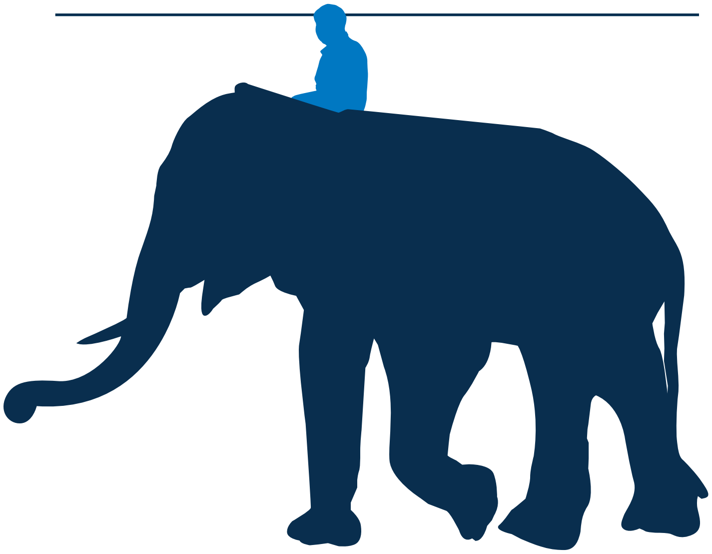
# 1 INTRODUCTION

Many people have poor spending and borrowing habits – think of the shopaholic friend or the neighbor who is in debt. Every year, people looking to change their tendencies and habits spend millions of dollars on therapy, guidance and self-help books. The reality is that changing behavior is difficult. Inertia is strong. The dieter looking to lose weight knows this just as well as the smoker looking to change his habits. On the other hand, some people find it easy to change their ways. These people give up smoking easily, or are diligent when it comes to spending and borrowing habits. They keep tight budgets and use debt responsibly. What is it that causes some people to demonstrate good behavior while others not as much? It is the age old question: is it nature or is it nurture?

Unsurprisingly, the answer is "it's complicated." To help explain one of the drivers of our behavior and decision making, it is helpful to think of a simple metaphor depicting a human rider atop an elephant. The elephant is powerful and has instincts of its own about where it wants to go, determined in large part by nature, and its current environment. In essence, the elephant is what psychologists refer to as our fast thinking processes—our automatic instincts that we do without thought. Much like an elephant, fast thinking can be hard to redirect and control. Unfortunately, for many people fast thinking does not lead to sound financial behavior.[1]

The rider atop the elephant is much weaker than the elephant, but is more capable as a strategic planner. The rider equates to the slow thinking processes of our brains. Slow thinking is purposeful and takes effort. Setting specific goals and spending in a deliberative fashion are actions that entail slow thinking. People engage in slow thinking when they write grocery lists, plan vacations, choose colleges, and select credit cards. Very often, slow thinking is learned.

WHAT IS IT THAT CAUSES SOME PEOPLE TO DEMONSTRATE GOOD BEHAVIOR WHILE OTHERS NOT AS MUCH? IT IS THE AGE OLD QUESTION: IS IT NATURE OR IS IT NURTURE?



The question is: how do we get the rider to guide the elephant in the way that leads to the best outcomes? The great variability in behavior patterns for spending and borrowing is an established fact that we can take as given. What we cannot take as a given is whether, and how, the variability in financial behavior or financial literacy stems from nature or nurture.

[1] Kahneman (2011) describes the psychological framework associated with thinking, fast and slow, where fast automatic fast thinking is denoted as System 1, and deliberative slow thinking is denoted as System 2. The elephant and rider metaphor appears in Haidt (2006) and is further developed in Heath and Heath (2010).

This paper has two main goals. The first goal is to document recent findings about the impacts of nature and nurture on household spending and borrowing decisions. The second goal is to identify prescriptions to harness these and other innovations in order to help people make better decisions about spending and borrowing.

WE NEED TO ASK WHICH PEOPLE HAVE THOSE COMPETENCIES, AND WHICH DO NOT. AND FOR THOSE WHO DO NOT, WHAT KINDS OF INTERVENTIONS ARE POSSIBLE THAT WOULD HELP THEM MAKE BETTER DECISIONS?

Studies from the last 15 years tell us that both nature and nurture impact financial management, which is why it is vitally important to structure nurturing activities carefully and thoughtfully when it comes to changing spending and borrowing behavior. Economists believe that financial literacy is an important contributor to how well someone manages their spending and borrowing, yet recent research tells us that the degree of financial literacy varies dramatically across individuals. The degree of variation in behavior, especially for those with lower and middle incomes, cries out for a more defined roadmap. The world is becoming more complex. The time is now to do something to help people.

Two goals of this paper:

**(1) Document recent findings about the impacts of nature and nurture on household spending and borrowing decisions.**

**(2) Identify prescriptions to harness these and other innovations in order to help people make better decisions about spending and borrowing.**

The central questions we need to ask about spending and borrowing begin with the basic financial competencies individuals require. We need to ask which people have those competencies, and which do not. And for those who do not, what kinds of interventions are possible that would help them make better decisions? In answering these questions we need to look to insights from behavioral economics about which nurturing activities are likely to be effective and which are not. In short, we need to understand what smart nurturing entails! We need a better road map for how we address these important issues.

The remainder of this paper is organized into three financial sections that focus on different dimensions of spending and borrowing:

- Section 2 summarizes the current literature about financial behavior, literacy, and psychology.
- Section 3 discusses the roles played by nature and nurture.
- Section 4 describes a series of recommendations and concrete steps for both the public sector and private sector that can lead to improved financial behavior.

An appendix describes suggestions for improving household spending and borrowing.

# 2 SPENDING AND BORROWING: WHAT WE KNOW ABOUT BEHAVIOR, LITERACY, AND PSYCHOLOGY

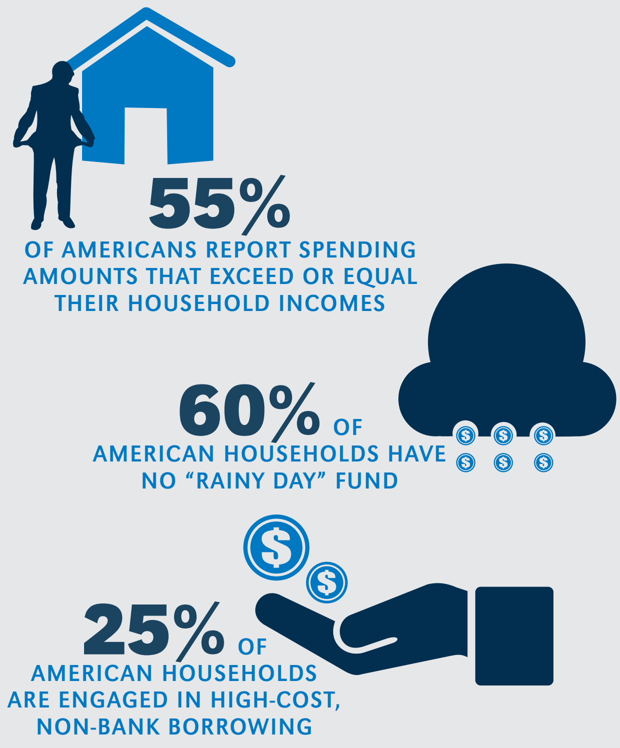
## 2.1. Behavior: National Financial Capability Study

Economists have recently intensified their study of financial behavior and financial literacy, painting a clearer picture of how people manage their money. One of the best data sources to date comes from The National Financial Capability Study, commissioned by FINRA's Investor Education Foundation in consultation with the U.S. Department of the Treasury and the President's Advisory Council on Financial Literacy.[2] The study consisted of three linked surveys conducted in 2009 and 2010:

1. National telephone survey of 1,488 representative American adults;
2. State-by-State Survey: online survey of approximately 25,000 American adults; and
3. Military survey of 800 members of the military and/or their spouses.

The National survey indicates that although people vary widely when it comes to making ends meet, a majority are challenged in this regard. Specifically, the survey found that more than half of all Americans live paycheck-to-paycheck: 55 percent report spending amounts that exceed or equal their household incomes. Approximately 60 percent of Americans have no "rainy day" fund to cover three months of unanticipated financial emergencies. During the previous five years, approximately 25 percent of American households engaged in high-cost, non-bank borrowing, such as taking out a payday loan or obtaining an advance on a tax refund.

The larger State-by-State survey, which reinforced the main findings from the National survey, provided a more focused demographic picture of the situation. The survey found that citizens of New York, New Jersey and New Hampshire were the most financially capable. At the other end, citizens of Kentucky and Montana had the lowest financial capability. Young Americans nationally were less financially capable than older Americans, and engaged more frequently in non-bank borrowing.




*Source: National Financial Capability Study commissioned by FINRA's Investor Education Foundation*

[2] The information in this section is taken from FINRA's website (http://www.finra.org/) and Lusardi (2010).

The Military survey is particularly interesting because members of the military with financial difficulties cannot obtain high levels of security clearances because of a concern that they are vulnerable in respect to espionage. As a result, financially challenged members of the military are at a significant career disadvantage. The survey reports that approximately 25 percent of service members are heavy carriers of credit card debt and/or report overdrawing their checking account balances, thereby incurring significant fees. Among enlisted personnel and junior non-commissioned officers surveyed, half of respondents reported that in some months, they made only the minimum payment on their credit cards. During the preceding five years, approximately 21 percent used high-cost, non-bank borrowing such as payday or auto title loans. Finally, 50 percent maintain rainy day funds.

THE BOTTOM LINE FROM ALL THREE SURVEYS IS THAT MORE THAN HALF OF AMERICAN HOUSEHOLDS MUDDLE THROUGH THEIR FINANCES.

Some portions of the military, such as the Navy, offer credit counseling. This might explain why members of the military appear to do better than their civilian counterparts in keeping up with monthly expenses, calculating how much they need to save for retirement, and checking their credit scores and credit reports.

The bottom line from all three surveys is that more than half of Americans muddle through their finances and it is clear many need help making better decisions about spending and borrowing. They need help to better make ends meet. They need help to better prepare financially for emergencies. They need help to take on less debt and reduce their borrowing costs when they do borrow.

## 2.2. Literacy: Issues with Numeracy and Financial Education

Since the late 1990s, economists have been documenting the degree to which the American people are financially literate.[3] Studies tell us that many people have difficulty understanding basic financial concepts about the terms and conditions of consumer loans and mortgages, and the characteristics of financial securities such as stocks and bonds. Moreover, many people over the age of fifty have issues with numeracy, meaning they find numbers challenging. The key research shows that they are unable do simple interest-rate calculations, do not understand inflation, and have difficulty with the notion of risk diversification.

We know there is a positive relationship between levels of household financial literacy and household financial behavior.[4] People with high levels of financial literacy are more likely to pay their bills on time, track expenses, set financial goals, engage in budgeting, pay credit card bills in full each month, maintain rainy day funds, save money from each paycheck, save for retirement, and hold diversified investment portfolios. In contrast, those with low levels of financial literacy are more likely to engage in negative credit behaviors such as debt accumulation, high-cost borrowing, mortgage delinquency and foreclosure.[5]

Although we do not know for sure, it is tempting to think that we can improve financial behavior by improving financial literacy, which takes us to the issue of financial education. We know that some schools teach financial skills, although the extent is spotty. A 2007 report from the Networks Financial Institute at Indiana State University assessed the teaching of financial topics nationally in K-12. The report documented that only about half of K-12 teachers indicated that they were teaching financial literacy topics. Teachers that did not teach financial literacy cited three main reasons for not doing so, namely lack of time, lack of state curriculum requirements, and lack of demand.

[3] The relevant literature begins with the work of Bernheim (1995, 1998) who reported that American households displayed low levels of financial literacy. See also Moore (2003), Lusardi and Mitchell (2006, 2007, 2008).
[4] Hilgert, et al. (2003) and Hastings, Madrian, and Skimmyhorn (2012).
[5] Stango and Zinman (2008), Lusardi and Tufano (2009), Moore (2003), and Gerardi, et al. (2010).

The Networks Financial Institute report indicated that teachers who did teach financial literacy topics focused on three main areas: spending money, saving money, and budgeting. Teachers of K-5 focused on basics such as the difference between wants and needs in respect to spending and saving. Middle school teachers added budgeting and banking to these topics. High school teachers reinforced these topics and delved deeper into income, money management, and, most notably, borrowing.

**"HEURISTICS"** ARE RULES OF THUMB TO MAKE TASKS MORE MANAGEABLE, AND GUIDE JUDGMENTS AND DECISIONS.

## 2.3. Psychology: Heuristics and Biases

As discussed in the introduction, an excellent metaphor for describing how our brains work is to imagine a human rider atop an elephant. To refresh your memory, the elephant is like our brain's fast thinker. It is powerful and has instincts of its own about where it wants to go, determined in large part by nature, past nurturing activities, and the current environment. The rider is like the slow thinker. The rider is much weaker than the elephant, but is more capable as a strategic planner.

In this metaphor, our elephants have their favorite paths, routes they regularly and habitually take. These routes correspond to simple "rules of thumb" that instinctively guide our behavior. Psychologists call these rules "heuristics." People rely on heuristics to make their tasks more manageable, and to guide their judgments and decisions.

If our elephants' heuristic paths were perfect, we would have no need to change. Unfortunately, our elephants, smart as many may be, are prone to errors and misjudgments. Psychologists call these tendencies "biases."

The challenge our riders face is to identify biases wherever possible and find ways to direct our elephants to follow better heuristics (paths). Consider what this means for spending and borrowing.

Spending and borrowing are complex decisions, and there is considerable variation in spending and borrowing heuristics. An example of a spending heuristic is "buy strawberries if the price is less than $2 a pound." An example of a borrowing heuristic is "always make at least the minimum monthly credit card payment and do not carry more than $500 as a balance." Heuristics often feature "satisficing" behavior, which entails setting an aspiration level for what is good enough and using that aspiration as the basis for behavior. A person who sets $2 as her aspiration price for buying strawberries might set out to visit three stores selling groceries, and make the purchase at the first store she finds that sells them for $2 per pound or less. This is an example of a satisficing search rule.

As a general matter, satisficing can lead to satisfactory outcomes. However, people who set their aspiration levels too low have elephants that tend to stop the search too early. These people are biased in their belief that the outcome of their search will be favorable. The evidence from the National Financial Capability Study indicates that people do indeed stop their searches too early. More than 60 percent of respondents indicated that they do not shop around for credit cards. Approximately half of respondents who obtained auto loans did not compare offers from different lenders. For those seeking a financial professional, more than 40 percent did not speak with more than one advisor. Moreover, more than 80 percent did not check on the background and credentials of that professional with a state or federal regulator.

Respondents did engage in a more active search when it involved long-term contracts, mortgages being a primary example. Nevertheless, about one third of respondents with mortgages did not obtain offers from different lenders. Notably, the people who engage in the least comparison shopping tend to feature low incomes and low education.

In a similar vein, many appear not to have sought information about their credit report and credit score. This is important, since credit scores are a critical determinant of the interest rates they will be charged on mortgages and loans. Yet, only approximately 40 percent went to the trouble of obtaining a copy of their credit report and approximately 35 percent checked their credit score. The ones who did seek out the information tended to be those with higher credit scores.

As already noted, numeracy is a problem for many people who do not understand the main terms of their financial contracts. In this regard, approximately 20 percent of people with auto loans do not know the interest rate on those loans. Approximately 10 percent of those with mortgages do not know the interest rate on those mortgages. Slightly more than 45 percent of credit card holders do not pay their full credit card balance each month, and approximately 15 percent appear to have exceeded their credit card limit. Of the credit card holders who do not pay their full balance each month, 12 percent do not know the interest rate on the credit card with the largest balance.

Two of the most important biases are "excessive optimism" and "overconfidence." Excessive optimism is the tendency to have too rosy an outlook on life. Overconfidence about ability is the tendency to have an inflated idea of one's ability. People who are excessively optimistic tend to be disappointed by outcomes more frequently than they anticipated. People who are overconfident about their abilities tend to be unpleasantly surprised more frequently than they anticipated.

Those who do not shop around for credit cards, do not compare offers from different lenders for auto loans, and only speak with one financial advisor when seeking financial advice, act as if they are excessively optimistic. The cost of being excessively optimistic and uninformed about borrowing options can be high. In respect to credit card behavior associated with explicit fees and finance charges, such as late payments, exceeding credit limits, using cash advances, and paying only the minimum, as much as one third of the charges and fees paid by those with low levels of financial literacy are effectively due to ignorance.

In respect to overconfidence, one of the major findings of the National Financial Capability Study concerns self-perceptions of financial knowledge. When asked to assess their financial knowledge, most respondents gave themselves high scores. Yet the evidence about actual financial knowledge suggests that people are overconfident about their financial knowledge and about their knowledge of mathematics.

However, overconfidence can have a positive impact as well.[6] Research shows that people with high perceived financial literacy, but low actual financial literacy are approximately 15 percent more likely to pay their credit card balance in full, relative to those with low perceived and actual financial literacy. Moreover, this effect carries over to other behavior patterns. Given the same comparison groups, the high perceived financial literacy group is 10 percent less likely to carry a credit card balance, eight percent less likely to pay only a minimum balance, eight percent less likely to pay a late fee, and three percent less likely to exceed their credit card limits.

Similar results apply if we focus on the subgroup with high actual financial literacy, although the effect is not quite as strong. People with high perceived and high actual financial literacy are 11 percent more likely to pay their credit card in full, almost 12 percent less likely to carry a credit card balance, seven percent less likely to pay only a minimum balance, eight percent less likely to pay a late fee, and three percent less likely to exceed their credit card limits.

The data makes clear that people are struggling with the financial decisions they are making. Financial literacy rates are too low and too many people are making poor decisions. But as we will see in this paper, there is hope.

[6] Allgood and Walstad (2012).

# 3 NATURE AND NURTURE

## 3.1. Nature: Hardwired Drivers of Spending and Borrowing

Over the last 30 years, neuroscientists and psychologists have made dramatic advances in understanding the nature of the human brain and how people make decisions. Their research has led to the understanding that the brain operates as a system with many interlocking components. Some of those components are associated with conscious thought, others are associated with automatic processes such as breathing and walking, while others are associated with emotions and feelings. The elephant and rider metaphor is a simple way to keep the basic structure in mind. As pointed out above, our elephants are set in their ways, and much of their behavior is driven by nature.

Most decisions, including decisions about spending and borrowing, feature a combination of fast and slow thinking. Sometimes fast and slow thinking are in conflict with each other. Some people think that they make unwise choices, yet find it difficult to change their behaviors. Some people might say they eat too much, and have to cut down on their calorie intake. Others might say they drive too quickly, and need to slow down. Others might say they spend too much time partying, and need to spend more time studying. In all of these examples, stating a desire to change behavior is easier than effecting change. Our elephants can be quite resistant! If cutting down on calories were that easy, the diet industry would not exist.[7]

The fast thinking part of our brain appears to be hard wired to resist instinctively the acceptance of immediate pain and the delay of gratification. Moreover, the slow thinking part is often at a disadvantage in terms of mental resources because change takes conscious effort. People might try to change, but self-control takes effort, and often times the mental resources required tend to be greater than the mental resources available.

When it comes to self control, nature matters. Some people are simply better than others at self-control, and neuroscientific studies have shed light on why this is the case. Consider the following experiment.[8] A group of volunteers, all self-reported dieters, were monitored by neuroscientific equipment and shown photos of 50 different foods. The monitoring equipment recorded brain activity as experimental volunteers examined and made decisions about these foods. Examples of foods were tempting items such as candy bars and healthy, staple items such as vegetables. The experimenter asked the volunteers to rate each food first on taste and then on health benefits. The experimenter then selected for each participant an index food that the participant rated in the middle for both taste and health benefits.

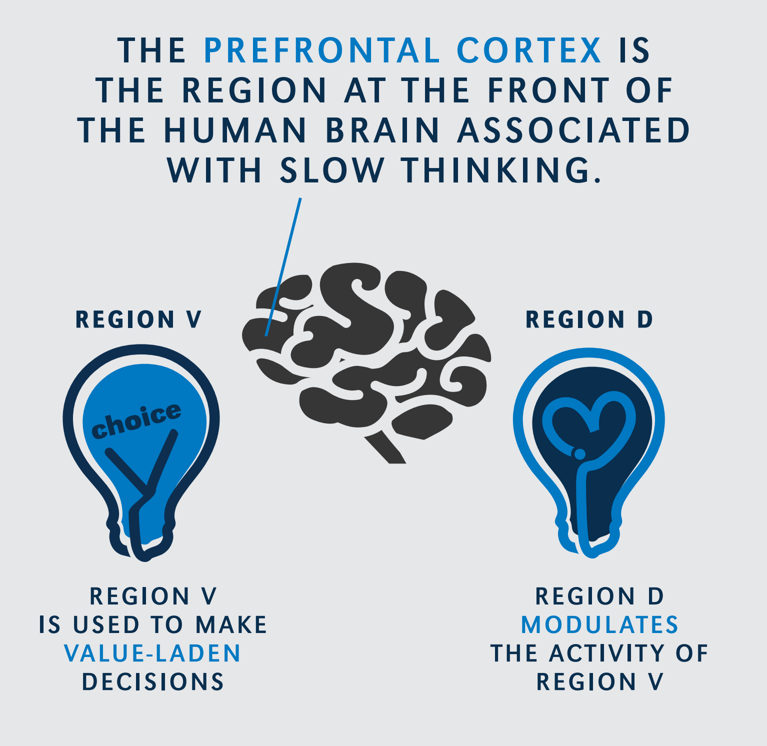
Subsequently, the experimenter presented participants with a series of choices, asking them to choose between accepting either the index food or one of the other foods. The question is how did the self-reported dieters choose, especially when faced with foods that they rated high on taste and low on health benefits?

[7] Thaler and Shefrin (1981), Shefrin and Thaler (1988).
[8] Hare, Camerer, and Rangel (2009).

Taste is tempting. That is why supermarkets display tempting candy bars at checkout counters. Did the self-described dieters always choose the index food over foods that were low in health benefit but high in taste? The answer is no: only some did. And this takes us to the central question about nature. What differentiated the natures of people who always made the healthy choices from the natures of those whose decisions were guided by taste?

The experimenters discovered that the differentiating factor turned out to be brain region activity. If we think about our brain as a circuit board with lights, we can see what parts of our brain light up in key circumstances.

The prefrontal cortex is the region at the front of the human brain associated with slow thinking. The food choice experiment identified two regions in this part of the brain. For ease of discussion, let us call one region "V" and the other region "D."[9] Everyone uses region V to make value-laden decisions. When we face a choice, region V lights up. However, region D only lights up for people who balance health benefits against taste. This is because region D appears to modulate the activity of region V. Region D is like an internal voice, forcefully asking, as we think of reaching for a candy bar, whether we need the extra sugar or would instead benefit by choosing a more nutritious alternative:




Part of the reason why in key situations the brain regions of some people light up but not others has to do with genetic differences. New evidence points to the importance of specific genes. One particular gene which appears to play a central role is the COMT gene.[10] Different people can have different variants of this gene, which plays an important role both in learning and, as it turns out, in financial behavior. Notably, one particular variant of this gene significantly increases the availability of dopamine in the prefrontal cortex of the brain.[11] Dopamine is a neurotransmitter which a large body of neuroscience research has shown to be critical for learning from new outcomes.[12] The favorable variant of the COMT gene impacts cognition mediated by the prefrontal cortex, specifically executive control and working memory, with the favorable variant being generally associated with better performance.

The recent experimental evidence tells us that nature definitely matters for financial decision making, just as it matters for athletic ability and physical traits. People with a particular gene variant appear to make better financial decisions. Because the same genetic variant is also associated with better learning, it is plausible that people with this genetic variant have learned to be more financially literate than others, and to make better financial decisions. This suggests that traditional financial education might only have a limited impact on financial behavior, an issue to be discussed below.

[9] The regions are the ventromedial prefrontal cortex and the dorsolateral prefrontal cortex.
[10] COMT is short for catechol-O-methyltransferase.
[11] The Met/Met genotype is associated with greater financial acumen and learning. See Kuhnen and Chiao (2012). The genotype breakdown was 22 percent for Met/Met, and 78 percent for the two others.
[12] Schultz (2007).

There is more to nature than genes. Age is also a factor. It turns out that the frequency of financial mistakes varies with age and follows a U-shaped pattern. That is, financial mistakes decrease with age until people reach their early 50s, and then begin to increase. The declining pattern up to the early 50s is consistent with people acquiring more assets during their early and middle years. However, the increase in mistakes at older ages highlights the natural limits on individuals' financial decision-making that come with aging.[13]

## 3.2. Nurture Alongside Nature: What Data On Twins Tell Us

People who manage to accumulate savings tend to be those with favorable habits for spending and borrowing. The aim of one research team investigating this question was to identify whether savings propensity is governed by parents instilling preferences into their children, or instead is the result of individual-specific life experiences.

There is evidence that suggests that some parents make efforts to teach their children good savings habits. These efforts entail activities such as providing a piggy bank, opening a savings account, and emphasizing the benefits of a frugal lifestyle. However, the evidence is effectively anecdotal rather than systematic and comprehensive; therefore, we lack good evidence about the effectiveness of parental efforts. Regardless, we know that parents tend to pass their savings propensities onto their children. In this regard, recent research helps us to understand the extent to which this similarity is genetic as opposed to the result of social transmission of behavior from parents to children.[14]

The new research analyzes data from Sweden about the savings behavior of identical and fraternal twins. The aim of the researchers conducting the analysis was to decompose the individuals' propensity to save into two components, one genetic and the other environmental. In this regard, the research methodology relied on the fact that identical twins share 100 percent of their genes, whereas fraternal twins typically share only 50 percent. The researchers reasoned that if identical twins save in a way that is more similar to their parents than is the case for fraternal twins, then they could conclude that savings behavior is partly genetic in nature.

The researchers found that genes explained about 33 percent of savings behavior for the individuals in their sample. Moreover, the effect is long lasting, and does not disappear later in life. An important finding is that parenting explains 40 to 50 percent of savings behavior for 20 to 25 year olds. However, the parenting effect decays significantly and reaches zero for people in their 40s. Therefore, *parenting* appears not to have a lifelong impact on the savings propensities of children. Not surprisingly, the effect of parenting on saving behavior is smaller when time for parenting is scarce. The research indicates that the wealth of parents and current socioeconomic status moderate genetic predispositions to particular savings behaviors. The researchers summarize their main findings by saying that both the genetic component and lack of self-control are the primary drivers of savings behavior.

[13] Agarwal, et al. (2009), Agarwal, et al. (2011).
[14] Cronqvist and Siegel (2011).

## 3.3. Traditional Nurturing: Financial Education and Impact

WHILE FINANCIAL LITERACY IS IMPORTANT FOR MAKING SOUND FINANCIAL DECISIONS, TRADITIONAL FINANCIAL EDUCATION HAS LARGELY BEEN INEFFECTIVE IN INCREASING THE DEGREE OF FINANCIAL LITERACY.

Education is a nurturing activity. Can a nurturing activity help to improve financial literacy? Alas, the picture is mixed. An important source of data to answer this question is the Jump$tart Survey of Financial Literacy. This survey is administered every two years as a test to a stratified, random national sample of grade 12 students. The basic test has largely been unchanged since 1997, except for cosmetic changes to the questions. Therefore, the test results provide important information about how financial literacy has changed over time.

Unfortunately, the trend has not been positive.[15] The proportion of questions correctly answered has declined to the region of 50 percent since 1997, when it peaked at 57 percent.[16] A particularly discouraging result is that students who took a high school class aimed at improving financial literacy fared no better on the Jump$tart test than those who did not take a class. With one exception, the research finds no general evidence that students who took such a course over a five-year period became more financially literate, developed better attitudes toward thrift, or exhibited better behavior. The one exception pertained to a stock market game. Students who participated in this game increased their literacy scores. That is to say, some nurturing activities aimed at improving financial literacy appear to have worked. But why? One leading researcher concluded that teaching needs to be interactive, contemporary, and fun.

While financial literacy is important for making sound financial decisions, traditional financial education has largely been ineffective in increasing the degree of financial literacy. Surely, these findings are telling us something about the limits of nurturing activities to improve financial literacy and behavior, but what?

The short answer is psychology. The use of games, like the stock market game, to teach financial concepts is effective because games activate the motivational centers in people's brains much more than traditional classroom lectures and exercises. Using games to teach financial literacy is not just about nurturing. It's about smart nurturing, and smart nurturing is about harnessing human psychology to help people make better decisions.

A similar perspective applies to practical experience.[17] Studies tell us that about 50 percent of people cite personal financial experience as the basis for their financial knowledge. This is more than twice the proportion who cite friends and family and between four and five times the proportion who credit formal financial education as their most important source of learning.[18]

Again, experience has a way of lighting up the reward centers and fear centers in our brains. Those reward centers might not be activated during traditional educational experiences, but they do come to life when real challenges are being faced. Moreover, many people learn from mistakes. For example, consider credit card markets. During the first three years after an account is opened, fees paid by new cardholders fall by 75 percent. By paying a fee, people learn to avoid future fees.[19]

[15] Gale and Levine (2011).
[16] Mandell (2008).
[17] The role of experience is also evident in the answers to a University of Michigan Surveys of Consumers question that asked about the most important way respondents learned about personal finance.
[18] Hilgert and Hogarth (2003).
[19] Agarwal, et al. (2011).

# 4 SMART NURTURING: BEHAVIORAL CHANGE AND CHOICE ARCHITECTURE

Fast thinking processes and numeracy skills are part of people's natures. Smart nurturing involves using psychology to help people make better decisions by changing the interactions between their slow thinking processes and fast thinking processes.

## 4.1. A Metaphor for Change

Changing behavior is difficult. Nevertheless, some people manage to do it. How? If we think about the metaphor of the elephant and rider to represent our brain's fast thinking and slow thinking processes respectively, the challenge for the rider is how to convince the elephant to go down the right path.

In a nutshell, the prescription for change involves three principles:[20]

1. Direct the rider: articulating the change to be made and laying out the steps necessary to get there;
2. Motivating the elephant: finding ways of generating appropriate emotional rewards along the path leading to change. Emotions are part of fast thinking. Emotional rewards come in many forms, but one important form pertains to identity. People who want to change often want to change their *identities*, and so part of the reward is behaving in a way that supports the vision the person has of who he or she wants to be; and
3. Shaping the path: manipulating the environment to foster change, using a variety of techniques such as the cultivation of new habits and modifying the choice architecture.

Choice architecture is intentionally structuring the choice environment to influence the choices people make, essentially, to "nudge" them to make different decisions.[21] Remember that supermarkets do not locate candy bars close to checkout counters by chance. They do so because of choice architecture, in an attempt to use temptation to induce customers to make more impulse candy bar purchases. Customers become tempted when they spot candy bars and their brains' fast thinking reward centers (V regions) become activated. Some customers will resist the temptation to make an impulse purchase, but not all.

## 4.2. Mental Accounting and Smart Nurturing

People use mental accounting as a categorization device to partition the way they think about issues and structure heuristics. When a mother instructs her child to "finish what's on your plate," she is using a heuristic in which the mental account balance is the amount of food remaining on the plate. Similarly, when retirees fund consumer purchases out of dividend income but not principal, they are following the mental accounting heuristic "don't dip into capital," because they separate dividends and capital into different mental accounts.[22] When someone uses the heuristic "only use income tax refunds for large necessary durable purchases," they are relying on mental accounting, because they place income tax refund dollars into a different mental account than other dollars such as take home pay.[23]

"Don't dip into capital" and "use refunds to fund durable purchases" are mental accounting heuristics designed to help people face temptation successfully and override their fast thinking impulses. These heuristics direct the rider! They also exploit the decision environment to shape the path, for example by engaging employers and the IRS to withhold income. People who follow the tax refund heuristic feel good about themselves by complying with the rule, and to feel badly if they break the rule!

[20] Heath and Heath (2010).
[21] Thaler and Sunstein (2008).
[22] Heath and Soll (1996), Shefrin and Statman (1984).
[23] Thaler and Shefrin (1981), Shefrin and Thaler (1988), Mendenhall, et al. (2010).

## 4.3. Saving Money and Smart Nurturing

While some people might learn to use heuristics such as these, others might learn by being nurtured by others. One of the best and most important examples of purposeful nurturing via choice architecture is a behavioral program designed to help employees save more through defined contribution plans. The program is called "Save More Tomorrow" (SMT).[24] SMT is a sophisticated extension of mental accounting heuristics such as "don't dip into capital" and "use tax refunds to fund durable purchases."

The SMT program was designed to help employees who wish to increase their savings through defined contribution plans. Encouraging employees to join the program directs their "riders" and provides positive reinforcement needed to motivate their "elephants". SMT is essentially a four-feature plan, and the features are largely structured to shape the path to higher savings:

1. The program is voluntary, and any pain associated with increased savings is deferred. That is, employees who participate agree to increase their contributions months before they are called on to actually do so. This feature is a circumvention to remove temptation from the elephant's path. That is, by asking for precommitment, plan sponsors avoid stimulating fast thinking processes associated with the immediate gratification generated by spending in the moment; therefore, the need for the slow thinking D region of the brain to promote self-control is diminished.
2. Employees begin with the first paycheck after a raise. People hate losses. Psychologists tell us that for the average person, a small loss feels about twice as intense as a small gain of the same magnitude.[25] When people become accustomed to particular levels of spending, a sudden decrease in spending tends to register, mentally, as a loss. Losses are registered by activation of particular regions in the brain.[26] By waiting for a raise, and taking the increased savings only from the raise, people avoid feeling a loss associated with the increased saving, because their spending does not decrease. This feature both directs the rider and shapes the path.
3. The contribution rate continues to increase on each scheduled pay raise until it reaches a preset maximum. As the saying goes, slow and steady wins the race.
4. Employees can opt out at any time. Therefore people know they are not trapped by the plan. If their circumstances change, and they need to reduce their saving as a result, they are free to do so. However, psychological inertia, sometimes known as "status quo bias," causes most participants to continue to participate in the plan.

SMT has been extremely effective. For the 80 percent of people who agreed to participate, savings rates increased from three percent to 11 percent over the course of 28 months. After the first implementation of the SMT plan yielded dramatic results, Vanguard began to implement the plan for select 401(k) retirement plan sponsors.

[24] Thaler and Benartzi (2004).
[25] Tversky and Kahneman (1992).
[26] The anterior insula and amygdale are involved.

## 4.4. Borrowing Less and Smart Nurturing

One feature of directing the rider is to "follow the bright spots," meaning investigate best practices and clone them. Inspired by the success of SMT, researchers have begun a pilot study in choice architecture to address problems with borrowing.[27] The pilot plan is called "Borrow Less Tomorrow" (BLT), and took place using a sample of free tax-preparation clients in Tulsa, Oklahoma during the 2010 tax season. The pilot focused on credit card debt and auto loan debt, and offered tax preparation clients the opportunity to participate in the BLT program as a way of reducing their household debt. As with SMT, those who participated understood where they wished to direct their riders. The program provided them with help in motivating their elephants and shaping their paths.

BLT helps users structure realistic plans to control, if not reduce, high-interest debt. BLT has three parts: (1) a "decision aid" to direct their riders; (2) a "commitment option" to help motivate their elephants; and (3) "reminders" to shape their paths. This is how it works:

The goal of BLT is to help users structure realistic plans to control, if not reduce, high-interest debt. BLT has three parts:

**(1) A"decision aid" to direct their riders;**

**(2) A "commitment option" to help motivate their elephants; and**

**(3) "Reminders" to shape their paths.**

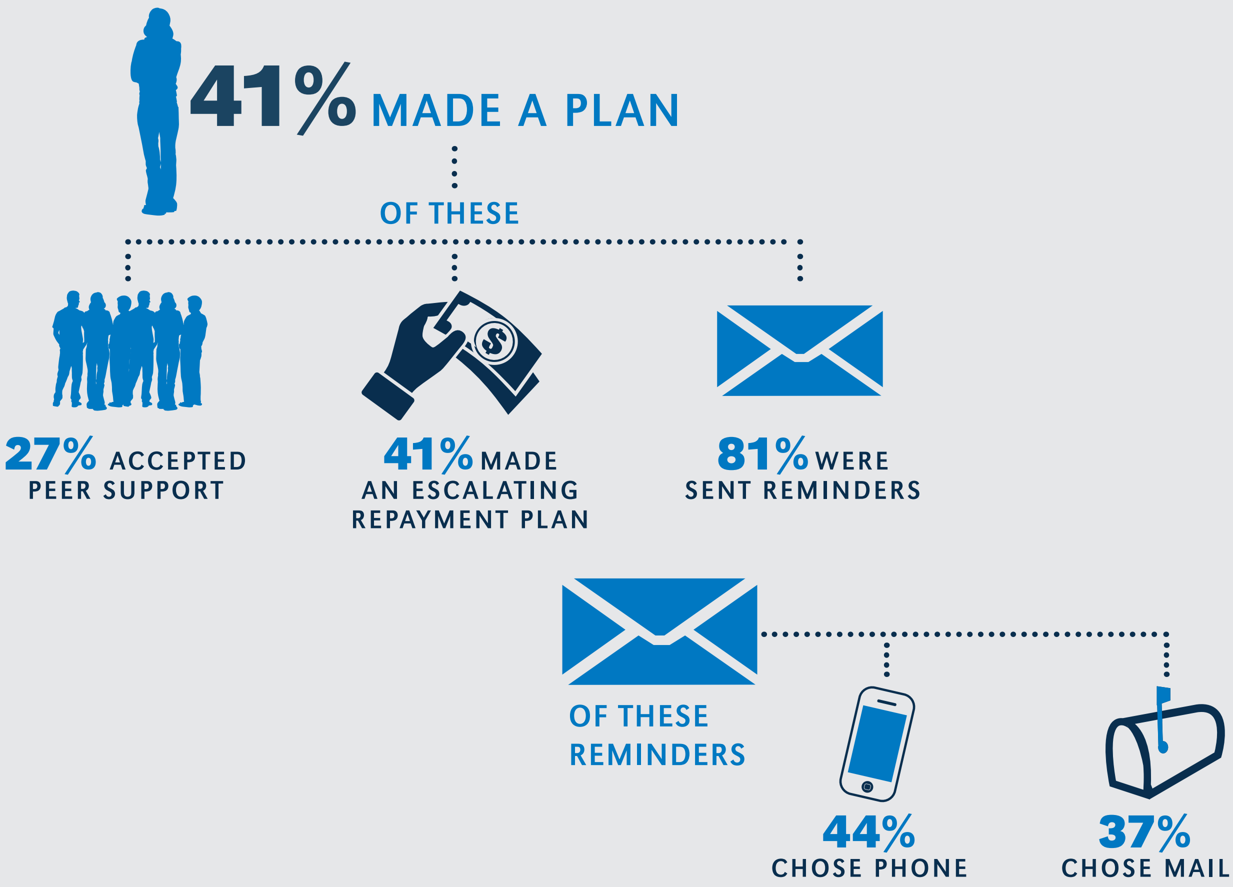
1. In the pilot, the decision aid was a simple repayment schedule calculator, which was used to take a specific debt, usually one featuring both a high balance and a high interest rate, and establish a concrete plan for paying down that debt more quickly. In this regard, pilot staff typically reviewed a number of hypothetical payment schedules with a client. These reviews served to demonstrate the possible reductions to repayment time and total interest paid that can come from making small increases in monthly payments. Having drafted a repayment schedule with equal monthly payments, staff then presented clients with the option of making accelerated payments. Clients walked away with repayment schedules contrasting their original repayment patterns and accelerated payment pattern.
2. The commitment device involved peer pressure. The way it worked was that clients were given the option of signing up one or more "peer supporters." These supporters were to be notified and asked to provide encouragement (but not financial support), in the event that the clients' payments fell behind schedule.
3. Reminders were generated monthly, if clients accepted them. Reminders could be received either by phone or email. The purpose of reminders was to keep the clients' debt reduction goals and plans at the forefront of their minds.

[27] Karlan and Zinman (2012).

The results from the pilot were encouraging. Of those offered the opportunity to participate in BLT, 41 percent made a plan. Of these, 27 percent accepted peer support, 41 percent made an escalating repayment plan, and 81 percent were sent reminders. For reminders, 44 percent chose phone, 37 percent chose email, and 19 percent opted not to be reminded. As for outcomes, 51 percent of clients who made a plan were on schedule after 12 months.

The BLT study had one other interesting feature that the authors controlled for several psychological or behavioral biases. In this regard, they tested participants' self-control, numeracy, and attention. One self-control question asked whether clients would choose smaller, immediate rewards over larger, distant rewards, even though they would always choose larger rewards if the rewards were delayed in time. The study also tested self-control by asking for people's reaction to the following statement: "I often find that I regret spending money; I wish that when I had cash, I was better disciplined and saved my money rather than spent it:" The study authors found that 77 percent of clients responded that they strongly or somewhat agree with that statement. Questions about attention asked how frequently clients think about their financial situations. Thirty percent said something less than "a lot." Finally, in respect to numeracy, the study authors assessed a measure of exponential growth bias associated with interest compounding from open-ended, intuitive responses to a question on population growth. They found that 49 percent underestimate, 34 percent overestimate, and 6 percent provide approximately the correct answer.

## OF THOSE OFFERED THE OPPORTUNITY TO PARTICIPATE IN THE **BORROW LESS TOMORROW** PROGRAM:



# 5 INNOVATION, CONCRETE STEPS, AND SMART NURTURING: TIME TO ACT

The research is clear that many people would like to make better decisions about spending and borrowing, but lack the knowledge or the motivation to do so. It is time to harness new innovations in order to help them do a better job of making ends meet, taking on less debt, reducing unnecessary financial fees, and setting aside funds for unexpected expenses.

This section describes the vast potential of combining three types of innovations to help someone make better decisions about spending and borrowing. The three innovations relate to new ideas about (1) smart nurturing; (2) more effectively using new technologies; and (3) finding innovative ways to engage young people.

The three innovations to help make better decisions about spending and borrowing:

(1) **Smart nurturing**

(2) **More effectively using new technologies**

(3) **Finding innovative ways to engage young people.**

## 5.1 Harnessing Innovations in Smart Nurturing

The elephant and rider metaphor provides a powerful paradigm for analyzing how smart nurturing can change behavior.[28] The evidence is mounting that smart nurturing can help many people make better decisions about their spending and borrowing. The research described in earlier sections tells us that smart nurturing is helping people manage their borrowing more effectively and increase the rate at which they save for the future.

We need to design smart nurturing programs that direct people's riders to carry out the basic tasks for managing their spending and borrowing. The appendix describes these tasks in some detail. The list is long and includes setting goals, developing budgets, tracking expenditures, adopting effective purchasing heuristics, searching for opportunities that produce more income, choosing appropriate lenders from which to borrow, matching credit cards to needs, paying credit card balances intelligently, and repairing credit histories when unfavorable events occur and the need arises for people to extricate themselves from excessive debt.

Recall that BLT features decision aids to direct riders about how to reduce borrowing costs. However, what makes BLT a smart nurturing program is that it also features commitment options to motivate elephants, and reminders to smooth paths. Motivating elephants and shaping paths can be more difficult than directing riders. Take the common advice that people maintain a spending journal to track expenditures. Carrying out this task successfully during the stresses of everyday life is a slow thinking activity that is easier said than done. Realistically, most people do not instinctively enjoy keeping spending journals and will resist, barring dire financial circumstances. The smart nurturing questions that need to be asked revolve around how to shape the paths associated with tracking expenditures.

[28] This metaphor also helps us set reasonable expectations for effecting change. As noted throughout this report, there is great variation in human behavior. In terms of the metaphor, some people have riders who are very good at reading maps and other people have riders who have difficulty reading maps. Some elephants are easy to motivate and others are difficult to motivate. Some terrain lends itself to being shaped and other terrain resists being shaped.

## 5.2. Harnessing Innovations in Technology

Technology is rapidly changing the way people receive information and make decisions, and it is making budget creation and expenditure tracking increasingly easier to do. As technology becomes more widely adopted, financial firms should use the opportunity to develop technology that implements the principles of smart nurturing.

Much of the challenge in using technology for household budgeting is entering data into software applications and learning how to use these applications. Notably, financial firms such as banks and credit card companies are increasingly offering online services (e.g., personal financial management tools) that tap into the data they maintain. In particular, online financial services can provide expenditure tracking, and can shape paths by offering "apps" that make it easy for households to implement sensible budgeting heuristics.

To the extent that people have identities and self-images, financial services firms can use online tracking to help people spend their money in ways consistent with their identities. They can do so by displaying information that contrasts how household expenditure patterns compare to specific groups. For example, someone might be presented with pie charts informing them that "in the last six months, households with your attributes spent their money and managed their borrowing in such a way." This type of information can help direct riders to desirable destinations, motivate elephants who aspire to particular identities, and shape paths by providing feedback as to whether the rider and elephant are on the chosen path!

However, technology is not a perfect substitute for human contact. In this regard, financial firms might consider offering call centers to complement their websites. To be sure, call center personnel can play a special role for those who are technologically challenged. However, call center personnel can also play the role of peers who congratulate those who stick to their budgets and provide advice to those who are straying from their budgets. Providing encouragement to people trying to stick to their budgets, and succeeding, motivates the elephant. Such encouragement implicitly makes use of individuals' identities, how they view themselves in terms of self-perception, and whom they seek to emulate.

Credit card companies have a particularly good opportunity to offer programs that help their customers intelligently direct their riders. By their nature, credit card companies have data about major portions of their customers' budgets. These companies are in the position of being able to offer online features and apps that provide options for managing their borrowing. In addition to tracking expenses, these apps can enable consumers who maintain balances to set up plans for repaying those balances over time, in order to avoid maintaining unnecessary debt.

Apps can help people avoid serious mistakes in managing everyday purchases and extraordinary purchases. It makes economic sense to borrow in order to finance the purchase of durables such as automobiles and large appliances. Unlike food and entertainment, which last a short time, durables provide consumers with benefits over longer time periods. The interest on loans used to finance durables is akin to rental payments. However, it does not make economic sense to borrow money to finance nondurables such as food and gasoline. Apps can help make people aware when they are making the mistake of paying groceries or gasoline with borrowed money, because they do not pay enough of their monthly credit card balances.

Smart nurturing apps can also help someone set up a system to break out large expenses into mental accounts, in order to enhance their salience. This can be valuable for someone who suffers from limited attention when it comes to managing borrowing. Apps can be structured with sensible defaults, along the lines of SMT, which force people to make an active decision if they are going to make a mistake and pay unnecessary interest.

## 5.3. Harnessing Innovations to Engage Young People

We want to teach our children good heuristic habits, but as the research has shown, traditional financial education taught in a classroom has mixed results. Electronic games constitute one of the most significant recent innovations that has proven to be effective. People of all ages, especially children, play games. What makes games potentially important for smart nurturing is that, according to the research, games are the one bright spot in K-12 financial education.

Why is it that apart from game-based exercises, traditional K-12 financial education appears to be so largely ineffective? The answer might well be that in traditional K-12 financial education, nurturing falls short of smart nurturing. Traditional education is focused on directing riders, but not on motivating elephants or shaping paths. In contrast, games appear to motivate students' elephants by stimulating their competitive instincts, activating the reward systems in their brains, and shaping their paths by making decisions easy to make!

The power of electronic gaming should be harnessed to help children develop the skills to make better decisions about spending and borrowing.

Why are online games so popular, and what is it about games that lead them to be a bright spot in financial education? A strong possibility is that online games are easy to play, and are not unduly taxing on users' lazy, energy draining slow thinking mental processes. Instead, decisions in games are largely determined by automatic, fast thinking processes. Games activate mental reward systems, and so our elephants enjoy the experience. Moreover, game designers work hard to shape paths, so that playing a game through to the end is fun and enjoyable. Compare that to learning about financial education from a textbook and it is not surprising that these games are effective tools for increasing financial literacy.

Well-structured games motivate our elephants by arousing us. Arousal temporarily changes our hormone balance. Adrenaline flows. Dopamine flows. Winning creates highs. As was discussed earlier, people with particular genotypes appear to learn more effectively and make better decisions because of elevated dopamine levels in particular regions of the brain.

Games can be designed to teach basic financial concepts and financial intuition. The research tells us that many people are not numerate. Games can be structured to represent financial problems in ways other than as groups of numbers.[29] Some games are designed to get people to make decent enough financial decisions to outwit their opponent, who are out to exploit them financially, and win; and winning generates dopamine transmission!

The potential for using electronic gaming to help people make better spending and borrowing decisions is largely untapped. In addition to the kinds of possible benefits mentioned above, games can be customized. This means that game structures can be used to represent real decision tasks, provide users with an opportunity to make choices in an environment that works well with their riders and elephants, and plays to their strengths instead of weaknesses associated with a lack of financial literacy and numeracy. Educators have a particularly valuable opportunity to harness this resource as a mode to reach young people who have resisted more traditional methods of education.

[29] Chernoff (1973).

## 5.4. Who Must Take Action?

The private sector and the public sector, members of the media, educators, and individuals themselves can all play a role in bettering financial practices.

Private sector firms, especially those in the financial sector, can harness innovations that help people make better decisions about spending and borrowing. Financial service firms interact directly with their consumers on a continuous basis, use technology extensively, and maintain repositories of data that make it possible to offer customized advice.

Public sector officials must be willing to think outside the box of traditional education and encourage the application of innovations that help households make better decisions about spending and borrowing. The public sector, including elected leaders, can offer leadership by emphasizing the importance of improving financial behavior and financial literacy. The public sector can create centralized websites that provide people with a resource for locating information about techniques for managing their finances. Conceivably, such websites might offer small downloadable software apps that people can use as decision aids, that help them organize their financial data from multiple sources. Ideally, private sector firms could post links on their own websites to public sector websites, to generate a kind of private sector-public sector partnership.

THE PRIVATE SECTOR AND THE PUBLIC SECTOR, MEMBERS OF THE MEDIA, EDUCATORS, AND INDIVIDUALS THEMSELVES CAN ALL PLAY A ROLE IN BETTERING FINANCIAL PRACTICES.

The media are experts in knowing how to garner attention. Members of the media can look for interesting ways to attract attention to the importance of improving financial behavior and the various ways of doing it effectively.

Educators teaching K-12 financial education face a critical challenge because evidence suggests that, outside of games, traditional efforts are ineffective. Going forward, educators are advised to use games in the classroom to teach financial concepts in order to engage in smart nurturing.

In the end, individuals themselves bear the most responsibility for making sound financial decisions about spending and borrowing. Financial firms, the public sector, and the media can only lead them to water, but cannot make them drink. They must be the ones who decide they want to be better spenders and borrowers, and then take advantage of innovations for directing their riders, motivating their elephants, and shaping their paths to financial wellbeing.

# CONCLUSION

When it comes to spending and borrowing there is a wide spectrum of behavior. Some people are born with traits that lead them to make good decisions but many other are not. While our genes play a role financial decision-making, nurture and education play a significant role as well, meaning that there are opportunities to teach people better financial habits. Unfortunately, the existing efforts to promote sound financial decision-making, while well-intentioned, have not kept pace with what psychologists, economists and others have learned about how the human mind works.

To make real progress, we should harness innovations that can make it possible for people to overcome poor spending and borrowing habits. Smart nurturing programs, new technologies, and new educational techniques, such as using educational gaming software, are all underutilized ways to get people to make better financial decisions. It is the time to use our knowledge and resources for a collaborative approach across public and private sectors to instill mindful spending and borrowing habits in our classrooms and beyond. The private sector and the public sector, members of the media, educators, and individuals themselves can all play a role in improving financial practices. We can help people become more mindful spenders and borrowers, we just need to embrace the new knowledge and technology available.

# BIBLIOGRAPHY


Agarwal S, Driscoll J, Gabaix X, Laibson D. (2009a), “The Age of Reason: Financial Decisions over the Lifecycle and Implications for Regulation.” *Brookings Pap. Econ. Act.* 2009(2): pp. 51-117

Agarwal S, Skiba P, Tobacman J. (2009b). “Payday Loans and Credit Cards: New Liquidity and Credit Scoring Puzzles? *American Ecoomic. Review Pap. Proc.* 99(2): pp. 412-417

Agarwal S, Driscoll J, Gabaix X, Laibson D. (2011). “Learning in the Credit Card Market,” Working Paper, Fed. Reserve Bank Chicago

Agnew, J., and L. Szykman (2005), “Asset allocation and information overload: The influence of information display, asset choice and investor experience,” *Journal of Behavioral Finance* 6, 57-70.

Allgood , Sam and William B. Walstad (2012), “The Effects of Perceived and Actual Financial Literacy on Financial Behaviors,” Working Paper University of Nebraska-Lincoln.

Ameriks, John, Andrew Caplin and John Leahy (2003), “Wealth Accumulation and the Propensity to Plan,” *Quarterly Journal of Economics* 68, pp. 1007-1047.

Bernheim, Douglas (1995), “Do households appreciate their financial vulnerabilities? An analysis of actions, perceptions, and public policy,” in *Tax Policy and Economic Growth*, American Council for Capital Formation, Washington, DC, pp. 1-30.

Bernheim, Douglas (1998), “Financial illiteracy, education and retirement saving,” in O.Mitchell and S. Schieber (eds.), *Living with Defined Contribution Pensions*, University of Pennsylvania Press, Philadelphia, pp. 38-68.

Bryan, B., M. Buxton, R. Sheldon, and A. Grant (1997), “The Use of Magnetic Resonance Imaging (MRI) for the Investigation of Knee Injuries: A Discrete Choice of Conjoint Analysis Exercise,” Paper presented at the Health Economists’ Study Group Meeting, University of York, July.

Campbell, John (2006), “Household Finance,” *Journal of Finance*, 61, pp. 1553-1604. Christelis, Dimitris, Tullio Jappelli, and Mario Padula (2010), “Cognitive abilities and portfolio choice,” *European Economic Review* 54, pp. 18-38.

Chernoff, Herman (1973), “The Use of Faces to Represent Points in K-Dimensional Space Graphically.” *Journal of the American Statistical Association* (American Statistical Association) 68 (342): 361–368.

Cronqvist, Henrik and Stephan Siegel (2011). “The Origins of Savings Behavior,” Working Paper Claremont McKenna College.

Gale, William G. and Ruth Levine (2011), “Financial Literacy: What Works? How Could It Be More Effective,” Working Paper Financial Security Project at Boston College.

Gerardi K, L. Goette , and S. Meier (2010). “Financial Literacy and Subprime Mortgage Delinquency: Evidence from a Survey Matched to Administrative Data,” Working Paper 2010-10, Fed. Reserve Bank Atlanta.

Gigerenzer, Gerd (2008), “Why Heuristics Work,” *Perspectives on Psychological Science*, 3, pp. 20-29.

Hare, Todd, Colin Camerer, and Antonio Rangel (2009), “Self-Control in Decision-Making Involves Modulation of the vmPFC Valuation System,” *Science*, May 1: Vol. 324 no. 5927 pp. 646-648.

Haidt, Jonathan (2006), The Happiness Hypothesis: Finding Modern Truth in Ancient Wisdom, New York: Random Books.

Hastings, Justine, and Lydia Tejeda-Ashton (2008), “Financial Literacy, Information, and Demand Elasticity: Survey and Experimental Evidence from Mexico,” NBER Working Paper n. 14538.

Hastings, Justine S., Brigitte C. Madrian, and William L. Skimmyhorn (2012), "Financial Literacy, Financial Education, and Economic Outcomes," Working Paper, National Bureau of Economic Research.

Hauser, John (2011), "A Marketing Science Perspective on Recognition-based Heuristics (and the Fast-and-Frugal Paradigm, Working Paper, MIT.

Heath, Chip and Jack Soll (1996), "Mental Budgeting and Consumer Decisions," *The Journal of Consumer Research*, Vol 23, No. 1, pp. 40-52.

Heath, Chip and Dan Heath (2010), *Switch: How to Change Things When Change is Hard*, New York: Broadway Books.

Hilgert, Marianne, Jeanne Hogarth, and Sondra Beverly (2003), "Household Financial Management: The Connection between Knowledge and Behavior," *Federal Reserve Bulletin*, pp. 309-32.

Just, David, and Brian Wansink (2009), "Smarter Lunchrooms: Using Behavioral Economics to Improve Meal Selection," *Choices: The Magazine of Food, Farm, and Resource Issues*, 24(3), http://www.choicesmagazine.org/magazine/article.php?article=87

Kahneman, Daniel (2011), *Thinking, Fast and Slow*, New York: Farrar, Straus, and Giroux.

Karlan, Dean and Jonathan Zinman (2012), "Borrow Less Tomorrow" Behavioral Approaches to Debt Reduction," Working Paper Financial Security Project at Boston College.

Kuhnen, Camelia M. and Joan Y. Chiao (2013), "Genetic Determinants of Financial Risk Taking," PLoS ONE, forthcoming.

Lusardi, Annamaria(1999), 'Information, Expectations, and Savings for Retirement' in Henry Aaron (ed.), *Behavioral Dimensions of Retirement Economics*. Washington, DC: Brookings Institution Press and Russell Sage Foundation, pp. 81-115

Lusardi, Annamaria (2008), "Financial Literacy: An Essential Tool for Informed Consumer Choice?," Working Paper, Joint Center for Housing Studies, Harvard University.

Lusardi, Annamaria (2009), "U.S. Household Savings Behavior: The Role of Financial Literacy, Information and Financial Education Programs," in C. Foote, L Goette, and S. Meier (eds), *Policymaking Insights from Behavioral Economics*, Boston: Federal Reserve Bank of Boston.

Lusardi, Annamaria ( 2010), "Americans' Financial Capability," Report Prepared for the Financial Crisis Inquiry Commission.

Lusardi, Annamaria and Jason Beeler (2007), "Saving Between Cohorts: The Role of Planning," in B. Madrian, O. Mitchell, and B. Soldo (eds.), *Redefining Retirement: How Will Boomers Fare?* Oxford University Press, Oxford, 2007, pp. 271-295.

Lusardi, Annamaria, and Olivia S. Mitchell (2006), "Financial Literacy and Planning: Implications for Retirement Wellbeing," MRRC Working Paper n. 2006-144.

Lusardi, Annamaria, and Olivia S. Mitchell (2007), "Baby Boomer Retirement Security: The Role of Planning, Financial Literacy, and Housing Wealth," *Journal of Monetary Economics* 54, pp. 205-224.

Lusardi, Annamaria, and Olivia Mitchell (2008), "Planning and Financial Literacy: How Do Women Fare?" *American Economic Review* 98(2), pp. 413-417.

Lusardi, Annamaria, and Olivia Mitchell (2009), "How Ordinary Consumers Make Complex Economic Decisions: Financial Literacy and Retirement Readiness," NBER Working Paper n. 15350.

Lusardi, Annamaria, Olivia Mitchell, and Vilsa Curto (2010), "Financial Literacy Among the Young," forthcoming *Journal of Consumer Affairs*.

Lusardi, Annamaria and Peter Tufano (2009), "Debt Literacy, Financial Experiences and Overindebtedness," NBER Working Paper n 14808.

Lusardi, Annamaria, Daniel Schneider and Peter Tufano (2010), "Households@Risk: A Cross Country Study of Household Financial Risk," Paper presented to the 2010 American Economic Association Meeting.

Mandell, Lewis (2008), "Financial Education in High School," in Annamaria Lusardi (ed.), *Overcoming the Saving Slump: How to Increase the Effectiveness of Financial Education and Saving Programs*, Chicago: University of Chicago Press, pp. 257-279.

Mendenhall, Ruby, Kathryn Edin, Susan Crowley, Jennifer Sykes, Laura Tach, Katrin Kriz, and Jeffrey King (2010), "The Role of Earned Income Tax Credit in the Budgets of Low-Income Families." National Poverty Center Working Paper Series #10-05.

Miles, David (2004), "The UK Mortgage Market: Taking a Longer-Term View," Working Paper, UK Treasury.

Moore, Danna (2003), "Survey of Financial Literacy in Washington State: Knowledge, Behavior, Attitudes, and Experiences," Technical Report n. 03-39, Social and Economic Sciences Research Center, Washington State University.

National Council on Economic Education (NCEE), 2005, "What American teens and adults know about economics," Washington, D.C.

Norman, Brehm, Drake, Dyer, Frisby, Govil, Hinchey, Ke, Kejriwal, Kuang, Keyburn, Ler, Powers, Sanghai, Schieck, Sussman, Wang and Yan (2008), "Decision Heuristics and Price Search," Working Paper University of Texas, Austin.

Organization for Economic Co-operation and Development (2005), *Improving Financial Literacy: Analysis of Issues and Policies*, Paris, France.

Perry, Vanessa, and Marlene Morris (2005), "Who Is in Control? The Role of Self-Perception, Knowledge, and Income in Explaining Consumer Financial Behavior," *Journal of Consumer Affairs* 39, pp. 299-313.

Peters, Ellen, Judith Hibbard, Paul Slovic, and Nathan Dieckmann (2007), "Numeracy Skills and the Communication, Comprehension, and Use of Risk-Benefit Information," *Health Affairs* 26(2), pp. 741-748.

Ratcliffe, J. (1998), "Patients' Preferences Regarding the Process and Outcomes of High Technology Medicine: An Application of Conjoint Analysis to Liver Transplantation," Presented at the Health Economists' Study Group, University of Sheffield, January.

Ryan, M. and J. Hughes (1997), "Using Conjoint Analysis to Value Surgical Versus Medical Management of Miscarriage." *Health Economics* 6, pp. 261-273.

Schultz , W. (2007), "Behavioral Dopamine Signal," *Trends in Neuroscience* 30.

Shefrin, Hersh and Christina M. Nicols (2011), "Credit Card Behavior, Financial Styles, and Heuristics," *Journal of Business Research*, forthcoming.

Shefrin, Hersh and Meir Statman (1984), "Explaining Investor Preference for Cash Dividends." *Journal of Financial Economics* 13:2, pp. 253-282.

Shefrin, Hersh and Richard Thaler (1988), "The Behavioral Life Cycle Hypothesis," *Economic Inquiry*, XXIV, pp. 609-643.

Smith, Barbara, and Fiona Stewart (2008), "Learning from the Experience of OECD Countries: Lessons for Policy, Programs and Evaluations," in Annamaria Lusardi (ed.), *Overcoming the Saving Slump: How to Increase the Effectiveness of Financial Education and Saving Programs*, Chicago: University of Chicago Press, pp. 345-367.

Stango, Victor, and Jonathan Zinman (2009), "Exponential Growth Bias and Household Finance," *Journal of Finance* 64, pp. 2807-2849.

Thaler, Richard (2012). "Watching Behavior Before Writing the Rules," *The New York Times*, July 7, available at http://www.nytimes.com/2012/07/08/business/behavioral-science-can-help-guide-policy-economic-view.html?pagewanted=all.

Thaler, Richard and Shlomo Benartzi (2004), "Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving," *Journal of Political Economy*, vol. 112, no. 1, pt. 2, S164-187.

Thaler, Richard, and Hersh Shefrin (1981), "An Economic Theory of Self Control," *Journal of Political Economy*, v89(2), April, pp. 392-406.

Thaler, Richard and Cass Sunstein (2008), *Nudge: Improving Decisions About Health, Wealth, and Happiness*, New Haven: Yale University Press.

Tversky, A. and D. Kahneman (1992), "Advances in Prospect Theory: Cumulative Representation of Uncertainty," *Journal of Risk and Uncertainty* 5, 297–323.

van Rooij, Maarten, Annamaria Lusardi, and Rob Alessie (2007), "Financial Literacy and Stock Market Participation," MRRC Working Paper n. 2007-162.

Yakoboski, Paul and Jennifer Dickemper (1997), "Increased Saving but Little Planning. Results of the 1997 Retirement Confidence Survey," EBRI Issue Brief 191.Washington, DC.: EBRI.

Yoong, Joanne (2008), "Financial Literacy and Stock Market Participation," mimeo, Stanford University.

Young, Lisa and Marion Nestle (2002), "The Contribution of Expanding Portion Sizes to the US Obesity Epidemic," *American Journal of Public Health*, February 2002, Vol 92, No. 2, 246-249.

# APPENDIX

This appendix provides additional detail on the application of heuristics research to improving spending and borrowing behavior.

## A.1. Characteristics of Heuristics

People use heuristics as simplifying devices because the scope of the decision we face is overwhelmingly complex. Heuristics by their nature are imperfect and do not lead to perfectly rational choices. However, there is no requirement for perfection and it is critical not to let the perfect be the enemy of the good.

The heuristics that households use, both in general and for spending and borrowing, need to be both **fast and frugal**.[30] Frugal heuristics only require small amounts of information to implement. Fast heuristics are easily executed. Most heuristics are aids to slow thinking, and bear in mind that slow thinking takes effort. Therefore, households need to rely on heuristics that require only limited information; and they need to rely on heuristics that enable them to make decisions quickly.

There are several types of fast and frugal heuristics. One example is the **recognition heuristic:** In a choice between two products, choose the product with the most recognizeable brand. A second example is **take the best:** In a choice between two products, look for one good reason to choose between them by ranking the most important attributes in order and starting with the first attribute. If price tops the list of attributes, then choose the lower priced product. If the two products have the same price, base the choice on the second most important attribute, and so on. A third example is **satisficing:** in shopping for a product to fill a need, keep looking at products until coming across one that is good enough. Then buy it, and move onto another task. These examples are especially frugal. More sophisticated heuristics involve some consumer research in order to evaluate tradeoffs across different product attributes, such as gas mileage and size in automobile choice.

Consumer marketing literature documents the use of fast and frugal heuristics in practice. For example, there is evidence from the United Kingdom that in making healthcare decisions, many people use one-reason decision making. This appears to be the case in choices of treatments for miscarriage, knee problems, and liver transplantation.[31] Keep in mind that one-reason decision making is non-compensatory in nature is because people do not evaluate tradeoffs between product attributes. In this regard, a U.S. automobile manufacturer that surveyed car buyers found that three-quarters of those surveyed made their decisions using non-compensatory heuristics.

In a perfect world, non-compensatory heuristics are suboptimal because most choices involve accepting tradeoffs, and tradeoffs are the basis for **compensatory heuristics**. However, in particular decision environments, tradeoffs introduce too much complexity for the limited information processing capabilities that households possess. As a result, **non-compensatory heuristics** might be good enough, even though imperfect.

[30] Gigerenzer (2008).
[31] Ryan and Hughes (1997), Bryan et al. (1997), Ratcliffe (1998).

Over time, the marketing literature has addressed the question of whether there are heuristics that lead to choices which are close to being perfectly rational.[32] One example is the **value priority rule**. This rule features for each purchase, a "utility" level which measures the benefits of that purchase. The rule involves people ranking budgeted items on utility divided by price. Notably, this heuristic produces outcomes that are close to being fully optimal. A second example involves consumers facing many products from which to choose, and using what is called a **consider-then-choose decision rule.** This rule restricts choice to a small subset of available brands on the market. Data suggest that people who use this rule are coming close to the optimal solution. A third example pertains to people having access to many sources of information such as dealer visits, word-of-mouth, advertising, and reviews. In this case, households follow a rule whereby they allocate more time to those sources which lead them to change their choice probabilities more frequently. A fourth example pertains to the **recognition heuristic**, which works well when: (a) recognition distinguishes well-perceived brands from poorly-perceived brands; (b) recognition is relevant to the product category associated with the decision; and (c) the products being evaluated are representative of the reference class. A fifth and final example involves the **imitation heuristic**, where people imitate the choices of others. This heuristic works well if the person doing the imitating is similar in major respects to the people being imitated. Moreover, the heuristic lends itself well to social networking.

An interesting example of price search comes from a study about student purchases of textbooks at the University of Texas (UT).[33] Students purchasing their textbooks at UT have a choice. They can purchase at the University Co-op, which is convenient and effectively guarantees on-time delivery and stated quality; or they can search using other alternatives such as online multisite buyers, where they can pay approximately 40 percent less than the Co-op price but face the added inconvenience and risk of late delivery and poor quality. Research shows that students implement a reasonable low price search heuristic to balance off the benefits and costs of additional search. Notably, the students who have familiarity with statistics come closest to implementing an optimal search strategy.

Being fast and frugal is often good enough, even if imperfect. In this regard, households who use mental accounting-based heuristics often do so in a disciplined manner and try to keep the items in different mental accounts partitioned from each other. The most common example is to budget for specific categories but not for individual items. Examples of budget categories are food, clothing, shelter, transportation, and entertainment. A side effect of such mental accounting is that it brings a degree of inflexibility. The occurrence of unforeseen events might well suggest the need to adapt spending across categories. However, sticking to a mental accounting rule might well limit the adaptation.

A good example concerns the way older people react when the dividend checks they use to fund their consumer expenditures declines unexpectedly. The majority of such investors reduce spending by the amount of the dividend reduction, because they follow the heuristic **don't dip into capital,** even though they could offset some of the dividend reduction by selling stock.[34]

## A.2. Smart Nurturing to Develop Good Spending Habits

Recall the behavioral recommendation that the first step in change is to "direct the rider." For this, the rider needs to know where he or she is located, and where he or she wants to go. In the context of spending and borrowing, this means households must:

1. Know their take-home pay;
2. Write down the financial goals they wish to achieve in both the short term and the long term; and
3. Prepare a household budget.

[32] Hauser (2011).
[33] Norman, Brehm, Drake, Dyer, Frisby, Govil, Hinchey, Ke, Kejriwal, Kuang, Keyburn, Ler, Powers, Sanghai, Schieck, Sussman, Wang and Yan (2008).
[34] Heath and Soll (1996), Shefrin and Statman (1984).

A household budget encapsulates knowledge of take-home pay, and if done conscientiously also reflects financial goals. Setting a budget breaks down into a series of steps, such as the following:

1. Track daily spending using either a pen and spending journal, which can be a small note pad, or a spreadsheet;
2. Calculate income and expenses a month in advance, and map them out using a simple spreadsheet. Divide expenses into fixed expenses and discretionary expenses. First, set aside money for fixed expenses, and divide what remains among the discretionary items such as groceries and entertainment where there is room to maneuver;
3. Seek ways to decrease spending, for example by adopting a new way to trim expenses each week; and
4. Seek ways to increase income, such as taking a second job or beginning a small side business.

Motivating the elephant to engage in budgeting involves some creativity. There are many ways that households can spend their time more pleasurably than setting budgets. Preparing a budget and tracking expenses is similar to eating foods that are high in health benefits but low in taste. The challenge is how to motivate the proverbial elephant. For those living on the edge of making ends meet, of just being able to provide adequate food and shelter or not, fear can be a powerful motivator to engage in budgeting. For those not living on the edge, motivating the elephant means making budgeting as easy and fun as possible. One trick is to create games where winning households reward themselves with small luxuries if they create budgets successfully, but miss out on those rewards if not. Some rewards are intangible, and related to identity. People who wish to identify themselves as prudent and responsible, and who acknowledge that prudent and responsible households create budgets might be induced to do so in order to feel prudent and responsible.

Deciding how to allocate income across categories requires some self-knowledge and introspection. Households need to understand their priorities, and in a multi-person household that often involves negotiation. The challenge is to keep spending on different items within reasonable limits. It might also involve providing discretionary "no questions asked" categories for different household members to limit conflict. At the same time, setting aside time weekly or monthly to discuss how well the household is meeting its goals and dealing with unexpected expenses is good for communication, good for cultivating good habits, and good for maintaining discipline in spending behavior.

How can households shape the path of creating *and following* a budget? One way is to use the **envelope heuristic.** Households can create "virtual" envelopes for each category of expense, either by using physical envelopes with cash, or by electronically using a spreadsheet. The envelopes contain amounts of money set aside for each type of expense, such as food and clothing. Those who pay with their debit cards can track expenses using online banking. The records from spending journals will fill in any missing expenses. At the end of each month, households can subtract what they have actually spent from what they have listed on their spreadsheets. The envelope system instills discipline into spending behavior. Households that follow the envelope heuristic will not spend more on any category than the amount placed into the "envelope." If they empty an envelope too early, then they know they will need to find a way to finish out the current month without spending more. For example, those who find that they have spent too much money during the day buying lunch or coffee, might have to brown bag it until next month.

Peer support or professional advice can be helpful to those who find it challenging to keep to a budget. It can be difficult to recognize when fast thinking impulses overwhelm slow thinking prudence, leading individuals to fall into mental traps that work against them. For this reason, asking a frugal friend or family member for advice can be helpful. Households can also obtain free budget analysis from a credit counselor at a nonprofit agency.

Some households find it extremely difficult to stick to their budgets after losing a job because, psychologically, they cannot accept the reality of no longer being able to live in the way to which they have become accustomed. They might well feel ashamed at having to cut back, especially if particular luxuries are typical for their social milieu. However, continuing to spend at their prior levels will lead them to accumulate debt and place their families' futures at financial risk.

Shaping the path also features small heuristic techniques to cope with temptation and unexpected events during the course of a month. In this regard, most people have their own special weaknesses for impulse overspending in particular categories and "busting their budgets." Examples might be shoes and books. Identifying budget busters and developing habits such as delaying new purchases in these categories until the old inventory has hit some target is an illustration of a rule to resist giving in to budget busting impulses. Another technique is the **one-week heuristic:** When money is tight, households can delay all non-essential purchases for a week, to see if some of those purchases become less compelling . Or, households can use reward points from programs offered by retailers, banks and credit card companies. If the rewards from a program are for merchandise or gift cards, households can save them for necessities. Finally, households contemplating the purchase of a durable good that they only plan to use intermittently might be better off renting it instead.

The second step in budgeting is for households to write down the financial goals they wish to achieve in both the short term and the long term. These goals typically require that households save for the future. One such goal is to be prepared for unexpected contingencies by maintaining a short-term cushion. A **rainy day heuristic** stipulates that individuals maintain between $500 and $1,000 in their savings accounts for unexpected expenses they cannot postpone. Examples of such expenses are auto repairs and last-minute family trips. People who are very cash strapped and cannot easily save these amounts at one time, should consider shaping the path by setting up automatic transfers from their checking account each month using online banking or by working directly with their bankers.

People should also consider having a long-term emergency fund, consisting of approximately six months' worth of living expenses into a separate savings account to protect their families in case of a medical emergency or job loss. Doing so typically requires some path-shaping assistance along the lines of SMT. Online banking enables the monthly deduction of fixed amounts, such as $100, from checking accounts which are then deposited into savings accounts. Many people choose to have income taxes over-withheld, thereby generating income tax refunds. Such tax refunds are effectively savings, which can be used to provide funds for emergency savings accounts.

Long-term savings typically pertain to large future expenses or goals such as retirement or children's college education. To help direct the rider, households might find it helpful to focus on specifics such as planning to accumulate at least 125 percent of their ending workplace salary when they retire. Accumulating long-term savings usually requires participating in institutional plans such as a 401(k) plan with automatic deductions made from pre-tax pay and deposited directly into 401(k) retirement accounts. Even better is for the 401(k) plan to have an SMT option.

Consumers can save money by accumulating savings and they can save money by finding bargains. Bargain-hunting involves the use of good low-price search heuristics, and search entails comparison shopping before purchasing. People can shape the path to comparison shopping by using online sites and researching their planned purchases by consulting reports on product quality and price, especially for expensive items. They motivate their elephants by taking pride in finding bargains.

Smart consumers use some form of the value priority rule, and weigh quality against price, to make sure they receive good value per dollar spent. This is why some people favor store-brand groceries. However, it can go the other way as well. This is because it might happen that a high quality, high priced item offers better value than an item that is less expensive. Consumers can also check to see if they are receiving the most favorable deals on utilities, cable and telephone services, and banking by contacting providers to see if they have introduced new plans or deals. Using a value priority heuristic leads them to cut back on items that are not that important to them.

Smart consumers engage in planning and are patient. They wait for sales. They plan their meals before they shop for groceries. They refinance their mortgages. They are willing to negotiate, especially on large expenses, and are not bashful about asking if there are unadvertised specials. If they also comparison shop, they can ask retailers to match competitors' advertised prices. They are willing to ask landlords about renegotiating leases when local rental rates decline.

Using search heuristics entails knowing where to search. Bargain hunting households look to take advantage of group discounts. They use Internet search to locate coupon codes. They seek sample sales, meaning sales at which manufacturers sell samples directly to the public. They also shop at outlet malls. Some workers consider switching from driving their own cars to public transportation, or form carpools. Others try telecommuting.

## A.3. Smart Nurturing to Develop Good Borrowing Habits

People have many borrowing sources and one of the most important sources, and easiest to use, is a credit card. Individuals have choices to make in the types of credit cards they use. Some consumers think carefully about choosing a credit card (or cards), and others less so. What are some of the questions they should ask themselves to make well informed choices about their credit cards? Consider some examples of questions about destinations for the elephant along with some pointers for directions to go.

- Do they plan to use their cards for everyday purchases? If so, they might consider a rewards credit card that provides points toward cash back, merchandise or other benefits based on how much they spend.
- Do they expect to carry a balance? If yes, they would be well advised to search for a card that features a low standard interest rate, not just a low introductory rate.
- Do they need a card for emergencies? If so, they might maintain a separate card with no annual fee and a substantial credit line that could cover unexpected expenses.
- Do they need to consolidate debt? If yes, then they should consider choosing a card with a lower rate than their existing credit card offers. However, if the new rate is introductory and will increase after a period of time has elapsed, then they should plan to pay off the balance before that low rate expires.
- Do they wish to travel? If so, they might consider a rewards program that lets them earn air travel, cruises or vacations, as well as offering complimentary travel insurance and other perquisites.
- Is there a special cause that they support? If so, some cards provide contributions to particular causes such as nonprofit groups.
- Are they looking for bargains? If so, investigate whether their favorite store offers a card for loyal shoppers. Also, some cards offer shopping discounts.

Next, consider issues associated with problematic behaviors, along with suggestions for how to address the problems and change the behaviors. In this regard, recall the discussion about the pilot program Borrow Less Tomorrow. The goal of the BLT program is to help users structure realistic plans to control, if not reduce, high-interest debt. To this end, recall that BLT has three parts which are structured to address behavioral features arising from human psychology. The three parts are (1) a decision aid; (2) a commitment option; and (3) reminders. The decision aid seeks to direct households' riders. The commitment option helps to motivate their elephants. And the reminders help to shape the path.

The paths out of debt can be arduous. People's riders need to know whether they are in need of credit counseling, in which case they need to direct their riders to visit a credit counseling agency. How should they decide? The answer is to use a sensible heuristic, such as **one good reason**, by asking whether any of the following applies:

- Are they unable to pay the minimum balance due on their credit cards each month?
- Do they consistently pay one or more of their bills late?
- Are creditors and collection agencies calling, demanding payment?

If the answer to any of these questions is yes, then the prudent course of action is to schedule a visit with a credit counselor. In this regard, there are important things of which to be aware. The first is that there is a great difference between debt settlement and debt management. Notably, debt settlement companies can ultimately cause greater damage to someone's credit than their current situation. Debt management is often the better option.

Debt management is typically offered by a non-profit agency that can help debtors direct their riders, motivate their elephants, and shape the path back to being debt free.

Directing riders typically begins with reviewing budgets. As discussed above, this entails tracking spending to see where the money gets spent, making as tight a budget as possible that is feasible to implement, and assessing how much they can afford to spend each month on reducing total debt.

People need to direct their riders to pay more than the minimum payments. One good heuristic is first to pay balances with the highest interest rate. A second good heuristic is to refrain from adding debt. In this regard, people who are debt challenged might find it beneficial to speak with their creditors. Creditors have an interest in preventing their debtors from defaulting, and might have options to help them make their payments and begin reducing their debt. In some instances, creditors might even be able to reduce the interest rate they currently pay. A third heuristic is to pay cash and stop using credit cards for non-essential purchases. One technique here for carrying money is to avoid carrying small denominations, thereby forcing people to have to break large bills to make purchases.

Households in debt also need to direct their riders to keep track of their credit scores and repair their credit histories if necessary. A person begins the process by securing copies of her credit reports from the three credit bureaus. Everyone is entitled to receive one copy from each bureau every year at no charge. If someone is denied credit, the credit company will send them a letter explaining the reason, and identifying which credit reporting agency they used (which they can contact for another report).

Consumers are well advised to direct their riders to review their credit reports carefully, especially if they have been denied credit, because it will be important to understand the reason for the denial. One reason might be that someone has multiple late payments or unpaid bills. A second reason might be the presence of too much debt in relation to income. A third reason is errors in the report that affects the credit score. Someone can only begin to address problems with their credit scores if they know the source of the problem.

If behaviors lead to low credit scores, people need to direct their riders to begin to reverse those behaviors. If an entry on the credit report refers to an unpaid debt, they should attempt to pay the debt off as quickly as possible. Alternatively, they can consider contacting the creditor to discuss payment options. In the event of a dispute, they can add a note to their credit report explaining their perspective on the issue. Most negative entries eventually disappear from the report, which provides people who successfully reduce their debt to demonstrate new, improved financial behavior.

If the problem with the credit report is an error, the way to begin is to annotate all suspected errors on a copy of the report. The next step is to fill out an online dispute form or send a letter to the credit agency which explains the disputed entries and requests an investigation. Disputes often require the provision of copies and supporting documents. If a credit bureau cannot confirm the disputed entry within 30 days, they are required to delete it.

Motivating the elephant begins with an act of imagination. People need to imagine being debt-free, so that they can emotionally anticipate the benefits of having paid off their debts. The benefits include not worrying about how to meet all their payments, enjoying some peace of mind, having more money available in their budgets each month, and saving more for retirement, education, and emergencies.

Shaping the path begins with an act of control. Consumers should be sure to read their credit card statements as soon as it arrives each month, and not put it away in order to delay having to deal with it. A side benefit is that if they spot transactions they do not recognize, households can call a merchant to verify the charges.