

## **Chapter 29 Practical Challenges of Implementing Behavioral Finance: Reflections from the Field**

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### **ABSTRACT**

Behavioral finance is only useful if it can be applied to help people make better decisions. This chapter offers reflections of the good, bad, and ugly of practical applications of behavioral finance in a commercial banking setting. It explores the difficulties of non-experts experimenting with behavioral finance, and how effective applications require a unique mix of expert knowledge and the ability to effect change through a business. Principles of good applications of behavioral finance are also presented with information on how to start using behavioral finance within an organization. The importance of senior management acknowledging that behavioral finance practitioners do not necessarily know the correct answer and that they will need to use randomized control trials to learn is also discussed.

### **INTRODUCTION**

Taken in isolation, the ideas and concepts that comprise the field of behavioral finance are of very little practical use. Indeed, many of the attempts to apply these ideas amount to little more than a trite list of biases and pictures of human brains on PowerPoint slides. Talking a good game in the arena of behavioral finance is easy, which often leads to the misperception that it is superficial. Yet, making behavioral finance work in practice is much more challenging: it requires integrating these ideas with working models, information technology (IT) systems, business processes, and organizational culture.

This chapter reviews some of the common misperceptions of applied behavioral finance and problems with implementing behavioral ideas, based on experience from leading a functioning corporate behavioral finance team for nearly a decade. The chapter is intended to be neither an academic discussion on methodological rights and wrongs of human behavior, nor an instruction kit for practical application – the range of environments and applications is too broad. Instead, the goal is to provide an overview of themes that result in poor implementation or outcomes, or in misguided applications to commercial problems.

The first section addresses some misconceptions commonly held by aspirant practitioners, including more than a few academics trying their hand at commercial applications, about the nature of behavioral finance. The second section looks at some of the common problems or barriers to successful utilization of behavioral principles in practice. The third section offers some constructive principles on how to approach application. The final section concludes with some more practical suggestions of how to bring this rich body of knowledge to life within an organization.

## **MISCONCEPTIONS IN COMMERCIAL PRACTICE ABOUT BEHAVIORAL FINANCE**

Before discussing the difficulties of practical implementation, it is often necessary to persuade practitioners of the need to consider behavioral approaches at all. This task has become much easier since the turn of the century as terms such as *behavioral finance*, *behavioral economics*, and *decision science* are now much more familiar and less daunting. This change has been helped considerably by the explosion of accessible popular science books on various aspects of the field, as well as by various mainstream journalists covering the ideas in news stories. The sharing of the *Nobel Memorial Prize in Economic Sciences* in 2002 by Daniel Kahneman and Vernon Smith dramatically increased public awareness. The financial crisis of 2007–2008 further enhanced the credibility of behavioral finance as it provided a painful reminder that emotion and psychology are fundamental to how the financial system functions. This increased

credibility was particularly true in contrast to other areas of economic research – behavioral economics was about the only field of economics that came out of the financial crisis with more credibility than it had going in. The attention paid to the field of behavioral economics by governments, particularly in the United States and the United Kingdom following the publication of the book *Nudge* (Thaler and Sunstein 2008), and regulators, with the United Kingdom's Financial Conduct Authority (FCA) leading the way, has further increased its acceptance.

The commercial world is now much more open to behavioral thinking. This openness can lead to misconceptions and skepticism, sometimes to the point where it risks appearing a management fad, rather than a serious body of academic knowledge. Most unfortunate amongst these misconceptions is the notion that behavioral finance consists of nothing more than a list of psychological biases. This perception is unfortunate because the thoughtful categorization of a complex field into a number of distinct heuristics and biases, each accompanied by compelling examples, has helped to make the field more understandable, accessible and popular.

### **The “Bias” Bias**

Today, extremely long lists of biases are available, which do little to convey the underlying sophistication, complexity, and thoroughness of more than half a century of highly robust experimental and theoretical work. These lists provide no real framework for potential practitioners to deploy when approaching a tangible problem. And many of these biases appear to overlap or conflict with each other, which can make behavioral finance appear either very superficial or highly confused.

The easily accessible examples that academics have used to illustrate these biases to wide audiences have sometimes led to the impression that behavioral economics is an easy field to master. This misrepresentation leads to inevitable disappointment when categorizing biases proves not to be an easy panacea. A perception of the field as “just anecdotes and parlor games” reduces the willingness of

the commercial world to put substantial investments of time and resource into building applications grounded on the underlying ideas. Building behavioral finance ideas into commercial applications requires both depth and breadth of understanding of the theory and, in many cases, large resource commitments. Having broad guiding frameworks, such as the notion of ‘two systems of reasoning’ (Sloman 2002) enables users to approach the somewhat chaotic multitude of behavioral findings in a practical way, rather than to have a lengthy list that provides no conceptual framework with which to apprehend the complexity.

### **Behavioral is not in Conflict with Traditional**

A second misconception is that behavioral finance necessarily conflicts with traditional finance (also called classic or standard finance). This concern raises barriers to acceptance, particularly amongst those who have built their careers on understanding and deploying the tools, models, and ideas of traditional finance, and has often been perpetuated by behavioral proponents seeking to advance their ideas by focusing on areas where traditional finance is deficient. Again, these ‘anomalies’ have been an effective way of demonstrating that any attempt to understand financial systems without considering behavioral aspects was incomplete, but have sometimes led to the impression that behavioral approaches are entirely antagonistic to traditional financial models.

This combative approach and academic debate of the two schools of financial thought is not useful when trying to solve practical problems: it is off-putting to those in industry and risks entire systems being dismissed based on problems with specific details. Implementation of behavioral ideas requires building on what already exists by understanding traditional financial theory and frameworks. Couching language in terms that those in the industry can easily understand and accept is essential. Recognizing that behavioral finance is not in opposition to traditional finance, but rather a generalization of it, is crucial. The tools and models of traditional finance in many ways provide the

'right' answer. The descriptive inadequacy of *Homo economicus* does not mean dismissing all the normative models of classical finance, but rather requires thinking about how to adapt them for the complex reality of real people and multifaceted environments. Behavioral finance should help to make traditional finance more relevant, because it shows how to relax the overly narrow normative assumptions to adapt these models to the real world, providing better solutions for real people.

### **The Cost of 'Labels'**

A final source of misconception comes largely from within the academic field itself: the endless debates about what it is, and what it is not; continual attempts to define and label subsets of research findings as 'behavioral finance' or 'behavioral economics', 'social psychology', or 'decision science'; and methodological debates about what should be excluded. This labeling and quarrelling may be of academic interest, but leads to considerable confusion amongst practitioners, and makes the field as a whole look disconnected and internally inconsistent. This situation, in turn, leads to concerns that, whatever it is called, behavioral finance is not sufficiently developed and coherent to be practically useful.

Amongst these debates are those about whether deviations from the normative models should be classified as 'biases', or whether heuristics are reasonable responses to complex choice environments including the concern as to whether they are 'ecologically rational' (Todd and Gigerenzer 2012). The purist interpretations often lead to straw man definitions of what is 'in' and 'out' of the broad field, drawing artificial boundaries and divisions and casting doubts on potentially valuable tools and ideas as being somehow outside the fold.

A commonly expressed concern, at least in the mainstream press, is that there exists no grand unified theory of behavioral economics, and that the field is thus merely a chaotic collection of unconnected and often contradictory findings. For the purpose of practical implementation, the notion that this is, or needs to be, a clearly defined field

should be eliminated, reducing the desire to erode it with arbitrary labels and definitions. Human behavior operates at multiple levels from the neurological to complex social interactions. Any quest for a grand unified theory to mirror that of physical sciences may well be entirely misguided, together with the notion that such a theory is necessary for the broad field to be useful. Much more effective is an approach of treating the full range of behavioral findings as a rich toolbox that can be applied to, and tested on, a range of practical concerns.

## **CHALLENGES OF APPLYING BEHAVIORAL FINANCE**

The use of behavioral finance often falls prey to superficial approaches or inappropriate applications of financial theory. This section explores concerns with the practical implementation of behavioral finance by both industry practitioners and academic consultants, who often resort to a lift and drop of techniques between different domains of choice with little understanding of the context of those choice domains. The section includes examples of recent successes in applying behavioral finance.

### **Superficial Approaches**

The first major challenge is that behavioral finance is not particularly effective if applied superficially. Yet, superficial attempts are commonplace. Some seek to do little more than offer a checklist of biases, hoping that informing people of poor decision-making can solve the problem. Instead, a central theme of decision science is the consistent finding that merely informing people of their adverse behavioral proclivities is very seldom effective in combating them.

Because behavioral finance is both topical and fascinating to many people, it attracts 'hobbyists' who can readily recite a number of biases, but who neither have the depth of knowledge of the field overall, nor a solid grasp of the theoretical underpinnings of the more technical aspects of the field. For example, some refer to the behavioral concepts of *loss aversion* or *prospect theory*, without truly understanding the

foundations, and shortcomings. Even Cumulative Prospect Theory (CPT) (Tversky and Kaheman 1992), a framework containing many powerful insights central to behavioural research, and arguably the most accepted alternative to the traditional Expected Utility Theory, is frequently both misunderstood and misstated outside, and sometimes inside, academia. CPT is further discussed in the next section.

This chapter is not an attempt to erect barriers to entry amongst behavioral practitioners and claim that only those with advanced degrees in the field should be taken seriously. On the contrary, the effect of greater academic training can cause its beneficiaries to hold on too closely to narrow and technical interpretations of the field to make them effective practitioners. Indeed, some of the most effective practitioners do not have an extensive academic background in the field. However, they have invested considerable time and effort getting to know and deeply understand the breadth and depth of the field. They understand how new insights intersect with traditional theory and approaches and reflect on how this body of knowledge applies to a wide range of practical problems and decision environments.

Limited study of behavioral finance through reading the popular books on the topic may equip one to sound knowledgeable and appear convincing. However, as a relatively new field, the purchasers of behavioral expertise are seldom equipped to know the difference and may be unable to tell a superficially convincing approach from approaches that embody true understanding. This leaves the field open to consultants peddling 'behavioral expertise' but having in their toolkit little more than a list of biases that they apply sequentially and with little variation to each problem encountered. Warning flags should go up whenever the proposal rests heavily on catalogues of behavioral biases or contains a preponderance of pictures of brains.

Superficial application of behavioral finance leads to a particular tendency to take a behavioral principle or 'bias' in isolation and then implement something based on this process, without considering the broader complexities of the environment. A specific

problem may arise in part from a particular identified bias, but it does not necessarily follow that resolving this bias will either resolve the problem or that the intervention itself will not cause additional unforeseen problems of its own. Human behavior is complex and is influenced by a multitude of simultaneous effects; some internal, some social, and some environmental. These multiple factors all interact. Trying to understand and change behavior by going through a list of 'biases' one by one in isolation fails to account for this complexity.

Many examples exist of nudges that have effectively addressed a specific problem, often by focusing on a particular behavioral finding. However, many examples of unsuccessful nudges are also available. Changing behavior in a desired direction often requires a sophisticated program of experimentation and testing to see what works and what does not. It requires thoughtful consideration of all the aspects of the environment and behavior that requires substantially more depth and breadth than simply ticking off a list of biases. For example, the recently launched incomeIQ test from Schroders (2015) assesses respondents' propensity to display a number of behavioral biases indicating areas of improvement. While customers may appreciate the helpful tips, this test may do little to alter anyone's behavior.

By contrast, the Save More Tomorrow program for increasing pension contribution rates is an example of a good behavioral design (Thaler and Benartzi 2004). This behavioral approach has been developed through sophisticated and thoughtful understanding of many aspects of human behavior. It shows a clear understanding of both the environment in which the strategy will be deployed, and the objective the nudge is trying to achieve.

An example of a behavioral intervention, seemingly used without fully weighing up the associated costs, is the design of the default pension solutions in the UK's National Employment Savings Trust (NEST). To encourage those new to pensions contributions to participate over time and stay invested, the default solutions are invested at reduced risk

levels early to ensure that the investors' early experiences with investing are comfortable and they do not get put off by experiencing too much market volatility early in the process. Superficially, this seems like a good idea since emotional comfort with investing decisions plays a huge role in long-term investing success, and bad experiences early on may have long-term harmful consequences. However, this approach reduces risk at exactly the time when investors are most financially capable of taking risk. That is, their investment portfolios are small and their time horizons are long, which limits the long-term effects of early losses. So while this strategy has emotional benefits, it also has considerable financial costs. As a result, this strategy should only be used in those circumstances and for those investors for whom the benefits outweigh the costs. It might, for example, make sense for nervous investors with regard to their regular investments, but pension investments are the one area in which investors tend not to pay much attention to short-term performance. Thus, the strategy is very likely to commit investors to expected financial costs in a set of circumstances with few compensating emotional benefits.

Fidelity recently announced the launch of a 'people like me' approach to investing, in which investors can enter personal details such as their age and the value of their holdings as a basis of comparison for investment decisions that have been taken by others with similar characteristics. This approach can have powerful effects on behavior in many domains, leading people to reduce energy usage, or exercise more. In the field of investing, however, it primarily encourages investors to copy other people's poor investment decisions.

### **Academic 'Lift and Drop'**

The flip side of superficial approaches from untrained commercial practitioners, which usually occur in the consulting field, is that of applications marketed by highly trained academics, who often fail to consider the realities of commercial life outside the laboratory. Academics tend to build what they consider to be real world applications

within academe and then seek to ‘lift and drop’ these into commercial or policy applications. A core concern is that those in the commercial world seeking behavioral solutions frequently have little expertise on which to evaluate the proposals and can be easily won over by impressive sounding academic credentials.

Academic findings are not always easily transferable, at least not without substantial effort to tailor them to be effective in a real world environment. There are often confounding environmental variables or unintended consequences from well-intentioned behavioral interventions. Three particular types of misguided attempts to implement academic behavioral ideas are (1) to base an implementation on a single behavioral tendency that is valid when observed in controlled experimental conditions, but which has potential costs in a real-world setting; (2) to deliver highly technical solutions, which are over-engineered and thus not suitable to the practical problem they are trying to address; and (3) to offer behavioral alternatives to how things are already done without truly understanding the traditional approaches or the language and beliefs of existing practitioners.

Many of the suggested behavioral approaches to goals-based investing and attempts to build this into practical investment tools exemplify the first type of a misguided attempt (Das, Markowitz, Scheid, and Statman 2010). Goals-based investing is frequently justified using the notion of mental accounting, arguing that individuals do not typically see money as completely fungible, but instead compartmentalize their financial situation into mental accounts (Thaler 1999). A valid implication of this framework is that investors find financial decision making easier and more comfortable if they can conceive of their wealth in ‘pots.’ Furthermore, investors tend to be more motivated if they are pursuing specific goals for which they are saving. The recommendations of this strand of the literature generally lead to the suggestion that investments should be managed in a series of ‘buckets’, each connected to a specific future goal, and each with its own time horizon and risk profile.

Mental accounting brings benefits to investors insofar as it makes decision making easier and more contained. However, this approach also largely fails to consider the concomitant costs. Mental accounting reduces financial and psychological flexibility, tying investors into a particular structure of goals and preferences that may be spuriously precise reflections of their actual fuzzy aspirations. As a result, investors are relatively less able to adapt to changing circumstances and preferences over time. In short, this strategy commits the naturalistic fallacy of deriving 'ought' from 'is.' Much of the academic research in behavioral finance is descriptive in that it describes how people actually behave, not how they should behave. This approach of goals-based investing delivers both the benefits and the costs of mental accounting. By contrast, a method truly designed to address the problem would seek to build systems that incorporate the benefits while minimizing the costs (Davies and Brooks 2014).

An example of over-engineered technical solutions is in the area of portfolio optimization. The behavioral literature shows that investors do not exhibit expected utility theory preferences when making decisions. Instead, their decision-making is more closely approximated by non-expected utility models such as CPT (Tversky and Kahneman 1992). Optimizing a portfolio for CPT preferences is not an easy task since the optimization is non-convex. However, He and Zhou (2011) address the issue and find that computing a portfolio that would be optimally held by an individual whose preferences are described by CPT is possible. Although this process is possibly an interesting mathematical exercise, why would any investor ever want to hold this portfolio? Investing is a long-term activity. Yet, this process incorporates within portfolio solutions the very features that arise from behavioral responses to the immediate context (e.g., reference dependence and loss aversion), extrapolating them to portfolio choices influencing long-term outcomes of the investor's total portfolio. In short, CPT as a practical implementation commits the naturalistic fallacy: it confuses descriptive preferences for normative preferences, and thus commits investors to all sorts of choices

that in the long term they are likely to wish they had not made. Observed human choice in small frames is certainly not always optimal in broader long-term frames.

At least two other problems exist with this approach to portfolio optimization. First, it assumes that an individual investor's preferences can be specified precisely using a sophisticated model such as CPT. This model can have up to five parameters to be estimated – one governing loss aversion, two relating to the value function curvature in gains and losses, and two associated with some specifications of the probability distortion function. Moreover, the behavioral parameters, calibrated on immediate revealed preferences or hypothetical choices, are assumed to be stable over time and appropriate to long-term preferences for total wealth. Insofar as emotional responses to the current context, environment, emotional state, and frame induce behavioral proclivities; they are unlikely to be stable. Rather they will exhibit large fluctuations in strength depending on whether the decision maker is reflecting calmly on broader frames and longer horizons, or anxiously focused on narrow problems. So, even if applying a descriptive model to a normative solution were appropriate, accurately fixing this model becomes unlikely. Hence, users might exhibit spurious confidence and precision in a solution inappropriate to the problem at hand.

Yet, such approaches are increasingly available in commercial applications: systems putting investors through a sequence of questions that aim to elicit specific individual revealed preferences for risk attitudes, time preferences, ambiguity aversion, loss aversion, probability distortion, sometimes amongst other features. Advisors then use these results to calculate recommended individually tailored portfolio recommendations that somehow 'optimize' the portfolio for all these 'revealed preferences.'

This sort of approach is fundamentally misguided. It begins with spuriously precise measurements of descriptive features of an investor's point in time decision pattern, which are likely to be highly unstable, or at the least to evolve over time. The

approach then applies these preferences from one specific decision frame to another one entirely. However, the biggest problem with this approach is the notion that these descriptive features of someone's choices are those that should be applied to a recommended solution. Thoughtful investors should repudiate many of these revealed preferences as being inappropriate for their long-term wealth outcomes. For example, it is near impossible to rationalize why any investor would logically choose to use distorted probabilities when selecting an optimal investing strategy. The same goes for any specifications that are frame dependent as are most of the features of CPT.

A similar difficulty faces those goals-based portfolio construction approaches that use aspiration-based preferences such as Shefrin and Statman (2000). These approaches assume that an investor's ability to specify a target outcome for an individual goal today should be taken as an accurate expression of long-term preferences. Such preferences would imply that the goal is fixed, certain, and absolute, so that investors would give up substantial upside rather than accept any reduction in the chance of reaching this goal. However, the goal may instead simply be an easy way for an investor to express something that is in reality fuzzy and uncertain. Treating such preferences as 'optimal' or accurate is likely to incur a large potential cost for little gain.

The essential problem of all these approaches is that they take a descriptive academic model that explains choice behavior with reasonable accuracy in specific circumstances, and then apply it much more broadly than can be reasonably justified to quite different real-world situations. Normative models should be used if the goal is to help guide behavior. The goal of practical implementations of behavioral insight should be to help decision makers mitigate deviations from these normative theories, within the constraints imposed by the human need for immediate emotional comfort with situations and decisions (Davies and Lim 2014).

End users of such tools often have little experience that would enable them to evaluate whether a particular approach is fit for a specific purpose or over-engineered.

This problem is exacerbated in academic 'lift and drop' applications relative to the superficial approaches discussed in the previous section. That is, the academic pedigree and apparent sophistication and precision can give a strong illusion that the approach is at the cutting edge of behavioral science, rather than a spurious application of unstable solutions that could lead to investors locking short-term emotional preferences into important long-term choices.

The fact that many behavioral practitioners are critical of existing traditional approaches, without truly understanding them, makes this concern more problematic. They also often arrive without understanding the assumptions, knowledge base, and common language of the commercial world and as such fail to communicate effectively, potentially resulting in considerable misunderstanding. Offering the commercial world an alternative into an established approach requires the ability to communicate the new ideas in terms that those in the industry clearly understand.

### **Lack of Tailoring to Fit the Problem and Environment**

Effective behavioral implementation needs to be highly tailored and attuned to the precise environment and the practical realities of the problem at hand. This requires considering both the increased complexity and noise of decision-making outside the laboratory, as well as the organizational realities of getting the solutions implemented, accepted, and used. Tailoring the design and organizational deployment are at least as important as the behavioral aspects, if the implementation is to be effective.

The process of achieving these goals often fails on several levels. First, the implementation is frequently unsuccessful because it is not accepted into the organization at the outset, leading to skepticism and low usage. Gaining acceptance requires senior sponsorship. Acceptance also requires extensive efforts to ensure that the proposed approach fits into the organizational structure, existing processes, technology and systems, and regulatory requirements. Additionally, educating, preparing, and training the users are essential to ensure both initial acceptance and

continued usage, which in turn requires ongoing support. Consideration of an organization's culture is a vital part of this process.

Second, some devote insufficient thought to user experience (UX) design and ease of use, often adding steps or elements to existing processes. These may lead to better outcomes if used, but can also make employee or client tasks more time consuming or difficult. Poor user experience hampers both acceptance and use of a behavioral tool, and also often makes the behavioral insights themselves less effective. A clever behavioral intervention is of no value if not used.

This limitation is particularly true for both technology or software based implementations, but also of other behaviorally designed processes, such as client profiling and fact finding tools, sales processes, and product approval processes. An example of such a limitation is the deployment of decision journaling systems to help individuals document the rationale behind their decisions to combat hindsight and confirmation biases, and thus to facilitate improved decision-making. This approach is widely advocated by the behavioral literature and should be a feature of any good decision support tool or system. However, unless well designed to fit with the specific needs of the user, the details of the decisions they make, and the organizational environment in which they operate, decision makers will simply fail to use the tool effectively. They may also reject outright the broader behavioral system of which it is a component. For many decision makers, the additional task of having to document even a one sentence rationale for frequent decisions can be perceived as too onerous, regardless of how effective it might be.

Perhaps a better initial approach is twofold: (1) automate the capture of as many features of the decision as possible and (2) design a series of questions that the individual can quickly answer and which capture some essential features of the decision maker's emotional state at the time to be used later to combat hindsight bias. For example, simple multiple choice response scales capturing the decision maker's level of

confidence and emotion when making the decision may provide useful data at very low effort. The crucial element of the process is that the design is intimately linked to the needs of the decision maker and his willingness to engage.

### **Executive Reluctance**

A final concern with practical implementation is that many executives are reluctant to fully embrace behaviorally grounded approaches, even given considerable evidence supporting their effectiveness. Fortunately, this discomfort with novelty is no longer as prevalent as it was, but other sources of reluctance persist, forming barriers to adoption.

Some of this reluctance is related to the perceptions of superficiality previously noted. Many sophisticated executives have read popular books and articles in the field. They are rightly suspicious of others over-selling simplistic approaches that offer no deeper insights than currently used. Another perception is that behavioral approaches are useful only for trite or trivial problems. Discussions with senior executives should start by pointing out the many failings of superficial approaches, and being deliberately critical is often necessary to get sufficiently over their skepticism to move forward.

A related problem is that many successful executives assume that implementing behavioral ideas is simple and does not need to be tackled systematically and deeply. This attitude is an example of overconfidence that also leads to perceptions that behavior can be changed by simply reading or discussing biases, without the need to laboriously build this knowledge into tools and organizational design.

A particular reluctance in the finance industry lies in openness to behavioral findings on framing of information and data design. Reframing financial information to align the frame to broader objectives, rather than narrow details and myopic horizons, can lead to substantially better decision-making. Lower complexity is usually beneficial. Benartzi (2015) offers an approachable recent summary of our behavioral knowledge with regard to digital design. However, the finance industry is typically quantitative in nature. This creates great reluctance to genuinely believe that shielding ourselves,

employees, or clients from too much information and reducing the detail and frequency of data is something that should be pursued.

A final area of executive reluctance is an often surprising unwillingness to engage with experimentation, and with testing behavioral approaches using randomized control trial (RCT) designs, which deploy rigorous application of scientific method to truly establish what works and what does not. Some of this reluctance comes again from overconfidence. In the commercial world, individuals are usually rewarded for having a clear idea, believing in it, and pushing it to implementation. This mindset is not conducive to admitting lack of conviction or to design through experimentation.

The corporate world is certainly becoming more open to RCT approaches, but currently these are often used to test relatively small aspects of design such as the placing of design elements on the screen, or the use of different fonts or colors. Such aspects are worth testing and can sometimes make a surprisingly large difference. Yet, even more valuable would be testing larger aspects of behavioral design that require executives to admit that they do not know which path to take. This admission requires considerable courage, and to be able to generate sufficiently interesting solutions, filter them, and then design alternatives for testing requires considerable effort, knowledge, creativity, and commitment. It also requires substantial investment in resources to build prototypes and rapidly deploy and test them. RCT approaches are more expensive than fiddling with numerous shades of blue on a web page, but the potential upside of transcending the limits of traditional corporate innovation is also substantially greater.

### **The Good News**

Despite drawing attention to the challenges of implementation, over the last decade industry and policy makers have become more open to behavioral insights with many examples of good implementation and good behavioral design. These successes include automatic enrollment in pensions in various parts of the world, which has led to millions saving for their retirement that would not have otherwise been doing so. The United

Kingdom's Behavioral Insights Team has, amongst others, used RCT designs to increase tax compliance and the effectiveness of job centers. In the United Kingdom, the FCA has been pioneering behavioral approaches to financial regulation to improve outcomes for customers and many companies and start-ups are using gamification techniques to encourage better health and financial behaviors. A small number of sophisticated behavioral consultancies are also helping companies and governments address commercial and social problems with substantial rigor and credibility. Barclays has spent nearly a decade building behavioral approaches into IT systems, sales process, profiling tools, investment solutions, and many other ways of helping people to make better financial decisions, including a recent launch of a behavioral framework to encourage impact investing and philanthropy (Davies 2015).

Behavioral findings are more widely known and accepted than they were previously. They are being piloted and explored in an ever-wider range of industries and applications. Furthermore, advances in digital technology and data analytics are opening up new vistas for application, and making personalization, testing, and delivery cheaper and easier. With that said, industry and government are still only in the initial stages of building the decades of robust academic behavioral research into practical applications. Much still needs to be learned and tried.

## **APPLYING BEHAVIORAL FINANCE**

The previous section presented illustrations of good and bad applications of behavioral finance. This section offers a set of principles that should be considered when applying behavioral finance.

### **Principle 1. Behavioral Finance is Almost Always Useless in Isolation**

Consider the most isolated application of behavioral finance: simply educating people about their biases. Awareness may lead to a small improvement in actions and decisions but any effect is likely to be short lived as the stimuli for the biased action have not been

changed or removed. Successful applications of behavioral finance require an approach to people, processes and technology. They also require an acknowledgement that the traditional approach to any scenario may not be wrong. Corporate executives and others should not repudiate traditional thinking but embrace and augment it with an understanding of behavior.

The financial crisis of 2007–2008 brought much criticism of traditional portfolio management practices. This required organizations to reexamine their asset allocation techniques to evaluate possible improvements. Using volatility as a portfolio risk measure is computationally convenient but is incongruous with how individual investors think about risk, and leads to unreasonable conclusions about the preferences of investors (Egan, Davies and Brooks 2011). Is there a way of measuring portfolio risk that better reflects how individuals think about risk: that is, focused on the downside and allowing for better than expected outcomes to reduce portfolio risk? Along with quantitative financial analysts, Davies and De Servigny (2012) create a behavioral measure of portfolio risk that can be included into a traditional risk and return optimization framework with the objective function of minimizing behavioral risk subject to a given level of return. This Behavioral Modern Portfolio Theory recognizes that behavioral finance is part of the solution, but not the whole solution. In their model the departure from the traditionally used form of modern portfolio theory (MPT) is relatively small. It still allows investment practitioners to talk about efficient frontiers and asset allocation in a manner that is consistent with their professional training, and yet is linked to client measures of risk tolerance (Davies and Brooks 2014) that are stable and do not suffer from false precision or over-engineering. The importance of ingrained knowledge should not be underestimated when trying to drive adoption of behavioral finance in a large organization. This belief leads to a second principle.

## **Principle 2. Behavioral Finance Is a Companion to Traditional Approaches**

A recommended mindset is to start with the belief that there are probably good reasons

for why things are as they are, but to understand traditional approaches deeply enough to challenge the status quo. The implication is that behavioral finance is only ever part of the solution and needs to complement traditional approaches. Today, successful behavioral finance practitioners need to be specialists in behavioral finance and generalists in many other areas. They cannot operate in isolation from other specialists within an organization.

### **Principle 3. Behavioral Finance Is Not Just Nudges**

While all behavioral finance applications attempt to change behavior in some way, the wide array of tactics tend to align to a few broad options: educate people about their biases; rely on decision inertia with passive nudges such as changing the default option; and go beyond passive nudges by critically assessing how to present an active choice. Simply educating people about their biases is ineffective. As a result, an increase in nudge techniques has occurred because evidence shows them to be effective at changing behavior in many situations (Thaler and Sunstein 2008). However, a nudging is a blunt tool and may not always result in good individual decisions. Furthermore, while nudges may be effective in addressing specific, isolated behaviors, they are not particularly useful in helping people make confident, informed choices in complex decision environments.

Returning to the example of auto-enrollment into company pension plans, such a program may or may not lead to better outcomes. By auto-enrolling employees into a pension scheme, the total amount of pension savings will increase within society. Yet, are people saving more appropriately for their retirement? This is far from certain. The nudge takes one decision away from savers: whether or not to join the company pension plan, but does so by making one-size-fits-all assumptions on other decisions. The bluntness of this nudge comes from the employees' likely perception that all decisions related to their pension savings have been addressed. The default rate of contribution and the default fund selection act as a safety net for those who would not make a decision

for themselves. Rather than employees reviewing their contribution rate and investment fund, which are much more difficult assessments for novice investors, most succumb to inertia and contribute the default amount into the default fund with no assessment of whether this is appropriate for their type of retirement. A single default, no matter how well chosen to be approximately right for most, is always going to be approximately wrong for many. In effect, a valuable nudge on one decision has created more questionable nudges on two additional decisions. Although people are saving more for retirement in the United Kingdom, it is unlikely that most are saving the appropriate amount for their retirement as a result of auto-enrollment.

This assessment is not a criticism of auto-enrollment: it is an effective nudge. But more should be done to engage people with the choices that they still need to make. While debate continues about whether the libertarian paternalistic approach of manipulating choice through nudges is an affront to free choice, this debate misses a more important concept of *asymmetric paternalism*, which refers to policies designed to help people who can't or won't behave so as to advance their own interests, for example by constraining options or nudging towards default options, while encouraging more active engagement and less fettered choice for those who are willing and able to decide themselves.

Under asymmetric paternalism, practical applications of behavioral finance focus equally on those who cannot or will not make a decision, and those who could or would engage with making their own choices given an accessible opportunity to do so. Practical applications of nudges have tended to be overly focused on those who would not otherwise do something that is in their better interests, often to the detriment of those who are capable of making the decision. Behavioral finance practitioners need to do more to apply their skills to engaging decision makers and helping them make confident and informed decisions in complex environments, as much as to finding defaults that work well for the passive majority.

#### **Principle 4. Asymmetric Paternalism Should Be a Guiding Principle**

In practice, this principle means using a toolbox of the full range of behavioral approaches. For example, if the goal is confident and informed decision-making, then the individual needs three things at the point of decision: (1) the knowledge required to make the decision, (2) engagement with the decision, and (3) the emotional comfort to enact it. Table 29.1 reflects how effective various approaches are at achieving these three requirements.

(Insert Table 29.1 about here)

Simple information disclosure and traditional education accomplish little with respect to these approaches (Fernandes, Lynch, Jr., and Netemeyer 2014). Nudging can change behavior, but may actually have a harmful effect on knowledge and engagement since the comfort that knowing someone has thought about the problem is also an invitation for people to disengage. Only by bringing the full behavioral toolkit to bear can a fully engaged, informed, and confident choice emerge.

#### **Principle 5. Good Applications of Behavioral Finance Should Combine an Understanding of How Processes and People Interact to Induce Better Decisions**

Many people fail to make decisions because they feel they do not understand the complexity of what they need to consider, or because arriving at, and enacting any decision is just too difficult. Applications of behavioral finance that take advantage of these individuals reflect dishonorably on the discipline. Sadly, the finance industry has a large number of examples of failures in this regard. The use of teaser rates on credit cards and savings accounts products are among the most pervasive.

A common practice in the United Kingdom and the United States credit card industry is to offer an extended period of zero percent interest for individuals who transfer an existing balance from another credit card and pay a small percentage as a transfer fee. This opportunity can be advantageous for those who are disciplined in their finances. However, the way that people and process interact in this example means that

many are set up to fail.

At the end of the interest-free period, the interest rate reverts to a level much more typical of unsecured lending. If the borrower fails to remember that the interest-free period is coming to an end and does not clear the debt, either by making regular payments or by transferring to a new interest-free deal, the rate they end up paying is typically punitive compared to the most competitive standard rates. Although banks now have a responsibility to alert customers of the end of teaser rate deals, ample opportunity to profit from the inertia of ill-disciplined customers remains.

The central role of behavioral finance should be to reinforce good behaviors and help people make better financial decisions. It should not be used to profit at the hands of customers who do not recognize their own behavioral biases. Thus, behavioral finance fits well with the growing emphasis banking regulators are giving to *conduct risk*, which can loosely be defined as any commercial conduct that causes customer detriment.

Behavioral finance provides the insights and toolkit to ensure that customers are treated fairly, but this requires an understanding of how people interact with the processes that are put in front of them. The following are some examples to ponder of whether some specific decision frames are designed to account for potential behavioral bias.

- When a user interface designer recommends shortening the number of available lines on an investment fund selection document so that it fits on fewer pages, is the designer aware that the form is providing a subtle nudge to customer choices and that this might limit portfolio diversification (Benartzi and Thaler 2007)?
- Can customers be expected to read and understand a lengthy exclusions and disclosures document on a travel insurance policy without any information of the typical costs of obtaining medical treatment abroad to help judge the value of the policy? The framing of maximum limits on policy payouts does not describe the risk the insured customer still carries. Insurance policies often suffer intangible

information asymmetries that make judging good value very difficult for consumers.

- What is the best way to inform pension savers whether they are on track for the kind of retirement that they want? Can monetary forecasts be translated into lifestyle desires? Is showing the current lifestyles that the pensions are forecast to be able to provide a better way to frame the information, and can it spur workers to raise their contribution rates?
- Why do online investment platforms often show customers their daily returns and returns since purchase for each investment when displaying the portfolio? Daily return is not aligned to the typical customer's time horizon and increases perceptions of risk, and return since purchase creates an irrelevant performance anchor that can trigger the disposition effect. Both can result in detrimental customer decision making. Is a better approach to broaden the frame to show portfolio level past performance measured over an appropriately long time horizon?

Behavioral finance practitioners need to accept a role in helping people make better decisions, not simply identifying biases or promulgating those biases for corporate profit. This goal requires the integration of behavioral finance within organizations.

### **HOW TO MAKE BEHAVIORAL FINANCE WORK IN AN ORGANIZATION**

The practical application of behavioral finance within an organization is tricky, particularly in large organizations. How can an organization start to take knowledge that is concentrated in a few individuals and make it usable by all?

The FCA's focus on using behavioral finance has been beneficial, but also arguably somewhat harmful, to the practical application of behavioral finance in UK financial institutions. Beneficial, because it highlights and legitimizes a body of academic knowledge that has rarely been applied in the real world. However, as a consequence

the first areas within financial institutions to become awakened to behavioral finance have often been the regulatory control functions, which have typically scrambled to learn something so that they are not behind their regulator in knowledge. While any application of the field should be encouraged, trying to enthuse senior decision makers to the value of behavioral finance by focusing on lowered compliance risk has the effect of limiting the perceived scope of benefits and applications. Hiring specialists is necessary, but to be truly effective in changing the organization they need to be part of business strategy, customer insight, and proposition design teams, and not just within control functions.

Putting practical applications of behavioral finance in the hands of non-specialists requires an assessment and redesign of tools and processes; and widespread adoption of behavioral finance within large organizations requires thoughtful design. For example, the Behavioral Insights Team, which was formerly part of the UK Cabinet Office, published their EAST (easy, attractive, social, and timely) framework for using behavioral insights (Behavioural Insights Team 2014). Behavioural interventions should be:

- Easy (E) includes harnessing the power of defaults, reducing the ‘hassle factor’ of taking up a service, and simplifying messages.
- Attractive (A) includes attracting attention and designing rewards and sanctions for maximum effect.
- Social (S) includes showing that most people perform the desired behavior, using the power of networks, and encouraging people to make a commitment to others.
- Timely (T) includes prompting people when they are most likely to be receptive, considering the immediate costs and benefits, and helping people plan their response to events.

Examples that cohere to this framework include pension auto-enrollment, which uses the power of defaults; donating a set amount to charity via a text message, which provides a

default donation and removes the hassle of finding someone's bank card details; and providing the details of average household energy usage with utility bills, which prompts people to use less.

The EAST framework provides a useful guide to non-specialists when thinking about how to harness behavioral finance. However, it should not be construed as reducing behavioral finance to a checklist of biases and actions that, if avoided or implemented, mean that someone has done a good job. These tools of the behavioral specialist are not a substitute for that specialist's knowledge. The Behavioral Insights Team also recognizes that 'it cannot be applied in isolation from a good understanding of the nature and context of the problem.' A trained behavioral finance specialist should be involved in the 'behavioral audit' of existing and new processes to determine areas of possible improvement. This forms a final principle to consider when applying behavioral finance.

**Principle 6. Attempts to Modify Behavior Using Behavioral Finance Tools Require a Deep Understanding of the Objective and Context of the Decision Problem**

Digital services are growing in importance and popularity in various industries. This growth represents the next frontier for behavioral design and excellence. Benartzi (2015) provides a description of the challenges of influencing behavior on small screen devices. These challenges provide not only an opportunity to make behavioral excellence a priority but also a strong position from which behavioral finance can influence other offline areas of organizations.

Striving for behavioral excellence takes time. While a team is establishing itself and its influence in an organization, senior management must support the initiative for it to be effective.

A second element of necessary senior management support is their acceptance that behavioral finance is as much art as it is science. Some behavioral interventions are likely to fail. These failures should not be seen as a weakness of the practical application

of the discipline, but rather an additional opportunity to learn in an empirical setting. Marketing strategies typically embrace an experimental approach in which theories are tested and adapted. Behavioral finance needs the same approach. Well intentioned behavioral interventions could lead to unexpected customer responses. As conduct risk increases the focus on customer detriment, demonstrating strong behavioral rationale for an intervention is critical, despite the possibility that it fails to assist disadvantaged customers. Regulated organizations need to be confident that they will not be sanctioned because of failed experimentation aimed at helping customers make better decisions.

## **SUMMARY AND CONCLUSIONS**

Great potential exists for behavioral finance approaches to improve the financial decision-making of individuals, groups, and organizations. However, harvesting this potential must include an asymmetric paternalistic approach. Most importantly, this requires more knowledge of the field than can be garnered through reading popular science books. Untrained practitioners are driving an overreliance on nudge as a technique to the detriment of clients and customers. In our example above of a behaviorally motivated alternative to modern portfolio theory, understanding how clients behave is deeply embedded in the portfolio optimization. These kinds of implementation require specialist knowledge and are the true vanguards of the discipline. If organizations are serious about making the fullest use of behavioral finance, they need a core team of specialists within the business that has enough support from senior management to affect improvements at all levels of organizational teams and processes. An organization can achieve this in many ways, but many examples are available of both failed and successful attempts to embed behavioral finance. Although no perfect model of applied behavioral finance exists, the discipline still has many opportunities to grow and mature, and there are many commercially valuable untapped insights in the decades of rigorous academic research that underpins the field.

## DISCUSSION QUESTIONS

1. Explain how nudging alone constitutes a narrow use of behavioral finance knowledge.
2. Discuss the features of good and bad applications of behavioral finance.
3. Discuss an example of behavioral finance supplementing traditional approaches.
4. Explain asymmetric paternalism.

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**Table 29.1 Delivering Knowledge, Engagement, and Emotional Comfort through the Behavioral Finance Toolkit**

This table shows how different behavioral tools contribute to the forming confident and engaged decision makers.

	<b>Knowledge</b>	<b>Engagement</b>	<b>Emotional Comfort</b>	<b>Examples</b>
Disclosure	Little or none	None	None	<i>Disclosures</i> <i>Caveat emptor</i>
Traditional Education	Little or none	Little or none	Little or none	<i>Seminars</i> <i>Classes</i>
Nudges	None or negative	None or negative	Some	<i>Auto-enrollment</i> <i>Defaults</i>
Engaged Choice	Yes	Yes	Yes	<i>Just in time education</i> <i>Gamification</i>