Behavioral Interventions to Advance Self-Sufficiency

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OVERVIEW

The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project is the first major opportunity to use a behavioral economics lens to look at programs that serve poor and vulnerable people in the United States. Sponsored by the Office of Planning, Research and Evaluation of the Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services, the BIAS project aims to learn how tools from behavioral economics can improve the well-being of individuals and families served by programs that ACF supports. Many human services programs require clients to make active decisions and follow a series of steps in order to reap a benefit — from deciding to apply, to completing forms, to arranging for child care. Program designers often assume that individuals will carefully consider options, make decisions that maximize their well-being, and diligently follow through. Behavioral economics, which combines insights from psychology and economics, may help explain why these assumptions are not always borne out.

By describing work in three sites, this report illustrates how the BIAS project draws on the principles of behavioral economics to design solutions for ACF programs. In partnership with program administrators, the BIAS team uses a method called "behavioral diagnosis and design" to delve into problems that program administrators have identified, diagnose potential bottlenecks that may inhibit program performance, and identify areas where a relatively easy and low-cost, behaviorally informed change might improve outcomes.

Working with the Texas Office of the Attorney General's Child Support Division, the BIAS team explored ways to increase the number of incarcerated noncustodial parents who apply for a modification of their child support order, with the goal of preventing further accrual of child support arrears. The project team also engaged with the Illinois Department of Human Services and one of its job search contractors to identify behavioral interventions that could help increase the rate of engagement in job search assistance among clients who receive Temporary Assistance for Needy Families. Finally, work with the National Domestic Violence Hotline (NDVH) focused on reducing the number of callers who reach a hold message but hang up before talking to an NDVH staffer.

Key Findings

- The behavioral diagnosis and design process provides a means of identifying and addressing key reasons that programs may not be performing to expectation. The process can uncover behavioral bottlenecks that are amenable to behavioral solutions. It may also identify structural issues, such as a need to hire more staff, which are often outside the scope of the BIAS project.

- The diagnosis process encourages program designers to step back and examine multiple possible explanations for underperformance before embracing a particular theory or solution. This may improve the likelihood of success of any behavioral intervention.

As the project moves forward, the BIAS team will continue to work with public officials to design and apply behavioral interventions in ACF program areas to generate new ways of tackling problems. Promising interventions will be tested using rigorous research designs, employing experimental methods to reliably determine the impact of an intervention. Future publications will report the impacts of these interventions.

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EXECUTIVE SUMMARY

Insights from behavioral economics, which combines findings from psychology and economics, suggest that a deeper understanding of decision-making and behavior could improve human services program design and outcomes. Research has shown that small changes in the environment can facilitate behaviors and decisions that are in people's best interest. For example, a change in the way choices or requirements are worded may elicit greater self-control or increase the likelihood of making positive choices.[1] However, there has been relatively little exploration of the potential application of this science to complex, large-scale human services programs.

The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project, sponsored by the Office of Planning, Research and Evaluation of the Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services, is the first major opportunity to use a behavioral research lens to examine programs that serve poor and vulnerable populations in the United States. The project's goal is to learn how tools from behavioral economics, which is part of the broader field of behavioral science and is gaining recognition in academic and policy circles, can improve the well-being of individuals and families served by programs that ACF supports.[2] This report describes the application of behavioral economics in the early stages of the BIAS project. It provides an overview of the field, presents an approach to applying behavioral economics to human services programs, and shares insights from three case studies in the BIAS project.

Broad Lessons from Behavioral Economics

Behavioral economics generally aims to provide a representation of human behavior that is more psychologically realistic than the models of "rationality" constructed by traditional economics — that is, models that presume individuals will use all available information and make the best decisions in order to get the greatest benefit.[3] The field has organized its findings in a variety of ways, and there is no singular framework. Some researchers have focused on the "psychology of scarcity," which posits that the same way a muscle becomes fatigued and inefficient with repeated use, the human capacity for attention, cognition, and self-control is limited.[4] Three behavioral economics principles that are associated with the psychology of scarcity are described below, along with an explanation of how they apply to the BIAS project.

First, *cognitive resources are limited and can be overwhelmed.* Because of inherent limits on cognitive ability, people "economize" on cognitive resources when making decisions. They rely when possible on fast, intuitive thinking, as if they must reserve deliberative thinking for special situations. As a result of this "limited cognition," an abundance of information can, paradoxically, impair understanding.[5] Issues associated with the limits of cognition may be especially important to human services programs, where beneficiaries must often participate in detailed orientations about rules, responsibilities, and procedures.

Second, *attention is a finite mental resource.* "Spending" this resource to perform one difficult task reduces one's ability to "spend" attention on other tasks.[6] Behavioral research has also shown that people regularly

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1   See Thaler and Sunstein (2008) and Kahneman (2011) for an overview.
2   The term "behavioral economics" is used interchangeably with "behavioral science" in this report.
3   The field of behavioral economics started out by cataloguing violations to the "rational actor" model. See Thaler and Sunstein (2008).
4   See Mullainathan and Thaler (2000) and Datta and Mullainathan (2012).
5   Iyengar and Lepper (2000).
6   See Kahneman (1973, 2011).

forget, or neglect, to do important tasks whose benefits far outweigh their costs.[7] In human services programs, like programs in other areas, clients must often be attentive to program schedules, deadlines, and paperwork requirements. Limited attention may explain why, in some instances, clients fail to meet these requirements.

Third, *exercising restraint depletes a person's available stock of self-control.* Experiments confirm that people have a limited amount of self-control at any moment in time. This means that exercising restraint in some way (for example, resisting tempting food, avoiding a cigarette, or saving money) actually depletes a person's available stock of self-control. These limits on self-control explain why people sometimes fail to follow through on decisions they have made, and why minor inconveniences can lead people to abandon their goals.[8] To the extent that programs in human services, like other programs, require people to follow plans or to undertake actions that will generate a reward in the future, the limits of self-control may help explain why these actions are not always completed.

From Theory to Application: Behavioral Diagnosis and Design

The BIAS project uses a specific method called "behavioral diagnosis and design" to try to improve program outcomes through the application of behavioral principles.[9] In this approach, program administrators and researchers analyze each step in a program's process to identify possible "bottlenecks" where the program is not achieving its desired outcomes. Then, adopting the perspective of the program's clients (and sometimes its staff), the team searches for possible *behavioral* reasons for the bottlenecks — those related to decision-making processes and action — and tests the effects of behavioral interventions.

As depicted in Figure ES.1, the behavioral diagnosis and design process comprises four phases: defining the problem, diagnosing the possible reasons for the problem, designing an intervention, and testing the intervention. While the figure suggests a linear path, the ideal process is iterative, allowing for multiple rounds of hypothesis testing.

The first step in the process is to define the problem in terms of the desired outcome, without presuming particular reasons for the cause. That is, the BIAS team relies on data (both qualitative and quantitative) so as not to be influenced by *a priori* assumptions about how systems work or how the people within them function.

The BIAS team then collects both qualitative and quantitative data to explore and diagnose the possible reasons for the identified problem. The data needed for behavioral diagnosis are specific to the program area and context. Qualitative data usually include findings from interviews with program staff and clients, as well as program documents, such as annual reports and client intake forms. Generally, quantitative data include statistics on the number of clients served and the size and nature of the identified problem. Data from a management information system can be used to search for correlations among client characteristics, program inputs, and outcomes.

The data guide the team in developing hypotheses about the behavioral reasons for participant outcomes. For example, in a multistep process, the data may show that participation wanes or errors spike at particular steps in the process. Researchers focus their investigation on understanding the decision points and actions that directly precede these steps to uncover the behavioral bottlenecks that may exist. Then they attempt to see these actions through the eyes of participants and staff to understand how these key actors in the process perceive their actions and the choices in front of them. Context and circumstances are other key considerations.

The design stage comes next. Theories about why bottlenecks occur help the team generate proposals for designing behavioral interventions to address them. In some cases, a single intervention may address several hypothesized bottlenecks. Still, it is important to have a clear theory of change — a logical, step-by-step explanation of the path from the hypothesized problem to the possible solution — because an intervention may be effective at addressing one behavioral issue, but have no effect on another.

Finally, testing behavioral interventions with rigorous scientific methods is a crucial step in the behavioral

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7   See Choi, Laibson, Madrian, and Metrick (2004).
8   See, for example, Bettinger, Long, Oreopoulos, and Sanbonmatsu (2009).
9   The behavioral diagnosis and design process that is presented in this report was adapted for the BIAS project from a methodology, also called behavioral diagnosis and design, that was developed by the nonprofit organization ideas42 for applying insights from behavioral economics to improve programs and achieve impacts when programs are expanded and brought to scale.

FIGURE ES.1
THE BEHAVIORAL DIAGNOSIS AND DESIGN PROCESS

DEFINE	→	DIAGNOSE	→	DESIGN	→	TEST

REFINE PROBLEM DEFINITIONS

IDENTIFY ACTIONABLE BOTTLENECKS (most frequent drop-off points)

FOCUS ON SCALABLE INTERVENTIONS

Identifying problems of interest with program or agency

Gathering data, creating a process map and identifying drop-off points, and hypothesizing bottlenecks

Brainstorming behaviorally informed interventions that have the potential to address bottlenecks

Piloting the behavioral interventions using random assignment or other experimental framework

SOURCE: This figure was adapted from a figure created by ideas42.

diagnosis and design process. Under the BIAS project, most behavioral interventions will be tested using a random assignment design, where some portion of a given sample will receive the intervention, and the rest of the sample will not receive the intervention but will continue with "business as usual." The difference in outcomes between the two groups is the intervention's effect (if any), or its *impact*. Such randomized controlled trials are considered the most rigorous form of evaluation, and the most reliable way to detect the impact of an intervention.

In sum, the behavioral diagnosis and design process aims to connect the hypothesized problem, behavioral bottleneck, and design solution together in a coherent way. The sections that follow describe applications of that process to three early BIAS projects.[10]

Increasing Incarcerated Noncustodial Parents' Applications to Modify Their Child Support Payments

The average incarcerated noncustodial parent leaves prison with more than $20,000 in unpaid child support, which poses a serious barrier to reentering society and securing regular employment after release.[11] Additionally, these individuals are typically unable to meet most of their monthly financial obligations because they are unlikely to have either earnings or income while in prison. This inability to make child support payments, in turn, affects the state child support agencies' federal performance outcomes. As such, the majority of states have adjusted their laws to allow incarcerated noncustodial parents to apply for modifications to their child support orders.[12]

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10 Behavioral economics terms appear in bold face and are defined throughout this Executive Summary; select behavioral terms are defined in greater detail in the Appendix of the full report.
11 Thoennes (2002); Office of Child Support Enforcement (2012a); Council of State Governments Reentry Policy Council (2005).
12 However, child support enforcement laws and policies vary by state, and in some states incarceration is viewed as a type of "voluntary unemployment." See the Child Support Fact Sheet Series on "Realistic Child Support Orders for Incarcerated Parents" (Office of Child Support Enforcement, 2012a, 2012b).

The Family Initiatives Section within the Texas Office of the Attorney General's (OAG's) Child Support Division operates a small program, which was launched several years before the BIAS project began, that invites select incarcerated noncustodial parents to apply for a modification of their child support orders. Inmates who participate in the program can apply for the modification by mail, based on the substantial change in their financial circumstances. The OAG sends letters to these inmates informing them of the option to apply for an order modification and providing instructions on how to initiate the process. Once inmates receive a letter from the OAG, they must complete the application, request an appointment, and meet with the prison's law librarian. The law librarian notarizes the application and the inmate mails it back to the OAG. Despite the inmates' apparent need for order modifications, the response rate to the OAG's offer has been low. Only about 31 percent of incarcerated noncustodial parents who were sent letters by the OAG in spring 2011 had submitted a modification form a year later.[13]

Hypothesized Bottlenecks and Behavioral Concepts

Several potential drop-off points exist between the time when inmates receive a letter from the OAG and the time when they submit a completed application. The hypothesized bottlenecks that might cause this drop-off are discussed below.

▶ **Bottleneck 1: The inmate receives the letter, but does not open it, or opens the letter but chooses not to read it.** The **deliberation costs** — the costs of making a decision, in time or mental effort — may be too high to open and examine the letter. Furthermore, the OAG logo on the envelope may elicit the **ostrich effect** — the tendency to avoid information one does not wish to know — because the inmate expects the letter to contain unpleasant information about financial obligations.

▶ **Bottleneck 2: The inmate reads the letter, but does not understand it.** The OAG's standard letter is written at a reading level that may be too advanced for the average inmate. Unclear or difficult language would increase the inmates' **cognitive load**, or demands on their mental resources, decreasing the likelihood that any of them would complete an application requesting an order modification.

▶ **Bottleneck 3: The inmate reads the letter but decides not to act.** Incarcerated noncustodial parents experience the benefits of receiving a reduction in their child support order only after they are released from prison, which could be several years in the future. They may find it difficult to invest effort in a task that will not yield an immediate benefit.

▶ **Bottleneck 4: The inmate decides to act, but does not schedule an appointment with the law librarian.** A number of **hassle factors** are associated with scheduling an appointment with the law librarian and completing an application that requires detailed information. The inmate may also forget to schedule the appointment because of cognitive load.

▶ **Bottleneck 5: The inmate may make an appointment to meet with the law librarian, but fail to show up for the meeting.** Once the appointment time arrives, the inmate may not be in the same state of mind as when the appointment was made, reflecting a **hot-cold empathy gap.** That is, the self who intended to complete the application may have been in a different emotional state from the self who must actually go to the appointment and fill out the form.

▶ **Bottleneck 6: The inmate attends the appointment, but does not successfully submit the application.** In order to complete the application, the noncustodial parent must supply various types of information, including work history and child support order number(s). Obtaining this information may become a hassle factor that impedes completing the application.

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13 Authors' calculations are based on administrative data provided by the OAG.

Implications for Intervention Design

The BIAS team proposed a package of behaviorally informed changes to the OAG application process to address the hypothesized bottlenecks that are described above, which will be evaluated using a random assignment research design. Incarcerated noncustodial parents who were identified as eligible for the intervention were randomly assigned to receive either the standard letter and related materials from the OAG (the control group) or revised materials, described below, that were created for the intervention (the treatment or program group, referred to as the BIAS group).

Teaser Postcard

As part of the BIAS intervention, one week before sending the letter and application, the OAG mailed a postcard to inmates in the BIAS group notifying them that they could apply for a modification in their child support orders. The purpose of this postcard was to reduce the number of potential applicants who disregarded the letter they received one week later. The teaser postcard could influence the decision through the **mere-exposure effect** — increasing the recipient's awareness of the offer before sending the formal letter.

Revised Modification Packet

The application packet that the OAG routinely mails to incarcerated noncustodial parents who are selected to participate in the order modification program consists of (1) a letter that explains the application process for requesting a modification of child support orders, and (2) an application, which the interested recipient must complete and mail back to the OAG. The letter and application that were sent to the BIAS group were substantially revised.

First, the BIAS materials were printed on blue-colored paper so they would be distinct from other pieces of mail, with the hope that they would stand out in the reader's mind. In addition, the BIAS group received a letter that was written at a lower reading level than the one the OAG usually sends and that was graphically clearer and simpler (incorporating, for example, features like a checklist, bold headings, and so forth). This more readable letter may help incarcerated parents understand how modification can help them, and may reduce the cognitive load associated with completing the application. The BIAS letter also sought to assert a positive social influence by noting that "other parents" had had their child support orders reduced to as low as zero. This may increase the inmate's confidence that a modification is within reach.

The BIAS materials also included a checklist with "four easy steps" that inmates must take to modify the order. This was designed to help the recipient overcome the hassle factors that are associated with applying for a modification. In addition, Child Support staff pre-populated the BIAS group's forms with information that the OAG already possessed, including the child support order number, monthly order amount, and number of children on the order, so the applicant would not have to supply it.

Finally, in the standard OAG packet, it may not be clear to the inmate what needs to be completed and what does not. For example, the OAG's letter refers to the Affidavit Form as the "application," but the Affidavit Form is not labeled as such. The BIAS group received the application form and the Affidavit stapled together as one packet, with a cover letter clearly describing the contents.

Reminder Postcard

If members of the BIAS group did not return an application to the OAG within one month, they were sent a follow-up postcard with a reminder to submit the application. This follow-up served as a **nudge** for those who had been meaning to request a modification but had not yet done so, forgot to do so, or lost the original letter. In addition, the reminder postcard was **framed** to encourage those inmates who had decided not to fill out an application to reconsider their decision.

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The intervention components described above aimed to increase the number of complete applications *submitted* for modification. Several additional steps are needed before an applicant can actually *receive* a modification, which involve Child Support field office review and a court hearing.

Increasing Engagement with Job Search

One of the primary goals of Temporary Assistance for Needy Families (TANF) is to increase participants' self-sufficiency through work. Most states fund job search programs for participants in safety net programs such as TANF. Beneficiaries face sanctions if they fail to participate in required work activities, but engagement in job search programs is often quite low.[14] When TANF recipients do not satisfy their job search requirements, they risk a cut-off of aid and economic instability for their families,[15] and states risk missing annual work participation rate targets that are mandated by the federal government under the TANF block grant.[16]

The BIAS team, in partnership with Asian Human Services (AHS) and the Illinois Department of Human Services (DHS), hypothesized that increasing clients' engagement with job search could lead them to become job-ready more quickly, attend a higher percentage of mandatory job search sessions, apply to more full-time jobs, and, ultimately, find regular employment at a higher rate than otherwise.

At AHS's Work First program, clients participate in job search until one of several outcomes occurs: they are placed in a subsidized work experience,[17] they find an unsubsidized job, they are terminated for noncompliance, or the contractor requests that the client be reassigned to a different service provider because of missed meetings or failure to achieve the mandatory number of hours of job search.

Hypothesized Bottlenecks and Behavioral Concepts

The review of program procedures and materials, as well as discussions with program administrators and clients, suggested three psychological bottlenecks that could apply to AHS's services and staff.

▶ **Bottleneck 1: Clients may think of AHS and the welfare system on the whole as punitive and uncaring.** If clients enter AHS with negative beliefs and feelings about welfare agencies, it could color their view of the agency and their interactions with it. In addition, the way in which AHS presents information could affect the clients' perception of that information. For example, telling clients that they must meet their hours or they will face termination from the program is different from telling them that it is important to meet their hours so they can work toward their goal of finding full-time employment. The former message is more likely to engender negative feelings among clients about their job search.

▶ **Bottleneck 2: Clients may see job search as a passive activity and not expect a successful outcome.** Job search is an active, purposeful process that involves developing application materials, seeking out job opportunities, and submitting applications. Clients must understand this throughout the process, because if they see AHS as an extension of previous programs that did not work for them, they may expect to fail again.

▶ **Bottleneck 3: Clients may not have the cognitive resources to fully engage with the information presented during the orientation.** All human beings have a bounded capacity to process, understand, and recall information, especially if it is conveyed in complex ways. Even if clients understand the information as presented, they may not remember it all or they may not recall it when they need it. Furthermore, research shows that the pressure of negotiating life under conditions of poverty places a particularly high toll on cognitive resources, as people often need to make many trade-off decisions to manage their lives with limited financial resources.[18]

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14   In 2011, 16 states withheld the entire family benefit for the first sanction and 45 states either withheld the entire family benefit or closed the entire case in the most severe sanctioning situations (Kassabian, Whitesell, and Huber, 2012).

15   Hamilton et al. (2001); Michalopoulos and Schwartz (2000); Navarro, Azurdia, and Hamilton (2008).

16   As of 2011, 50 percent of a state's single-parent caseload was required to participate an average of 30 hours a week. Two-parent families were required to participate at a rate of 90 percent for an average of 35 hours a week (Kassabian, Whitesell, and Huber, 2012, p. 97).

17   Subsidized employment provides income support to disadvantaged groups and is intended to improve their employability by placing them in a temporary work activity until they can find a regular, unsubsidized job.

18   Mullainathan and Thaler (2000).

Implications for Intervention Design

A number of behavioral interventions might address the hypothesized psychological bottlenecks in AHS's Work First program. The intervention ideas discussed with AHS fall into two categories: (1) operational modifications, and (2) staff training. This section discusses two operational modifications: **priming successful identity** and overcoming **limited cognition**.

Priming Successful Identity

Every person carries around a number of overlapping and conflicting identities or roles, such as worker, parent, daughter, intellectual, and so forth. The way people feel and act depends on which identity is active, and any given situation has a strong influence on which identity emerges.[19] Program staff can encourage desired behavioral outcomes by drawing on identity priming — for example, by emphasizing an individual's strengths or successes.

Research shows that asking clients to think and talk about a time when they succeeded can activate identities that inspire and motivate them to take action toward their goals.[20] It would be wise to incorporate this approach into the process just before an important action is supposed to occur — for example, before the client fills out a job application or goes on an interview — or to do it on an ongoing and regular basis during the program. This same insight can be applied to the design of written materials and forms to make them more positive in frame, and to avoid activating client identities that are related to dependency or inadequacy.

Overcoming Limited Cognition

Important strategies for overcoming a person's limited cognition are to simplify processes, incorporate agendas that provide a roadmap to upcoming events, specify next steps in clear and attainable goal statements, and use reminders. These devices serve to direct attention to the information and action steps that are most important and are relatively easy to incorporate into the orientation and client meetings with case workers.

One overall insight from the field of behavioral science is the power of the natural tendency to believe that human behavior is driven in a consistent way by character rather than by the situation. This tendency, called the "fundamental attribution error," is pervasive despite research in social psychology that convincingly shows that this interpretation of behavior is incorrect.[21] Awareness of and sensitivity to the fundamental attribution error is important for practitioners, as their actions and words can influence a given situation or the overall environment in small ways that could ultimately have meaningful effects on participants' behavior. In other words, small changes can generate large results. For example, starting job search activities immediately, establishing goals during the first job search session, and emphasizing positive identities in materials and verbal communication may all matter in ways that are currently overlooked.

Increasing Willingness to Wait: The National Domestic Violence Hotline

Domestic violence is a major public health and social policy issue: 25 percent of women and 7 percent of men are victims of domestic violence at some point in their lives.[22] The National Domestic Violence Hotline (NDVH) addresses this problem by providing crisis intervention, information, and referrals via its 24-hour telephone hotline. Additionally, NDVH provides back-up support for several state hotlines and services for entire states that do not have the resources to operate their own hotlines. In the year ending August 31, 2012, NDVH received 275,499 phone calls, an average of more than 750 calls each day.[23]

The BIAS team worked with NDVH to minimize the number of callers who hang up before reaching an advocate (an NDVH staffer). When an advocate does not answer a call before four rings, a prerecorded message indicates that the hotline has been reached and advocates are busy handling other calls; the message repeats every 35 seconds, with silence in-between messages, while the caller is waiting on

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19 Ross and Nisbett (1991).
20 Hall (2008), Part 3.
21 Ross and Nisbett (1991).
22 National Coalition Against Domestic Violence (2007a, 2007b). In this report, the terms "domestic violence" and "intimate partner violence" are used interchangeably.
23 Authors' calculations using administrative data from NDVH.

hold. By NDVH's definition, "abandonment" occurs if the caller hangs up after reaching the first message; these callers are presumed to be an important part of the target group that NDVH aims to serve. Hotline staff view the failure to serve such callers as a lost opportunity to address an unmet need.

Hypothesized Bottlenecks and Behavioral Concepts

The waiting experience for NDVH callers has important implications for whether or not they receive help. Many callers hang up while on hold, and once lost, they may never call back and receive the assistance they sought. The BIAS team hypothesized that three potential behavioral bottlenecks were associated with the caller's experience of waiting.

▶ **Bottleneck 1: Calling NDVH is likely to be stressful and emotionally painful because of the reason for the call, and waiting on the line in silence may trigger fearful thoughts and the stress of waiting. Present bias** — the tendency to focus on short-term preferences (like avoiding the **stress of waiting**) rather than long-term benefits (like reaching an advocate) — and cognitive load may exacerbate the caller's distress. If waiting on the line is stressful, this feeling consumes enough attention to trigger momentary cognitive load that makes it even harder to refocus on the long term.

▶ **Bottleneck 2: Callers do not know how long they will be waiting, and the uncertainty may make them more likely to hang up.** The outgoing message does not provide a **reference point** to help callers estimate their expected wait time, which may trigger **status quo bias,** or the belief that the future will be much like the present — that is, if they are waiting now, they will continue to wait indefinitely, which increases the likelihood that they will hang up.

▶ **Bottleneck 3: Unexplained waits seem longer than explained waits.** The unexplained nature of the wait increases the stress of waiting, making callers more likely to hang up. In addition, when thinking about other experiences, callers are more likely to remember calls when they waited on hold for a long time rather than calls when the hold time was short and reasonable, because highly emotional memories are generally more available than unemotional memories.

Implications for Intervention Design

The application of behavioral diagnosis and design to the NDVH call center process suggests that the hotline's outgoing message should emphasize why callers are experiencing a wait and that it is worth waiting for an advocate. With its current phone system, NDVH does not have the capability to give real-time expected waits, but the outgoing message can give averages or simply keep the expectation general: "You may have to wait a few minutes for an advocate, but once we pick up we will work with you to find answers and resources for you." Additionally, since expectations can lead a caller to hang up at any time during the call, it is preferable to place a supportive outgoing message early in the call.[24]

In addition, while callers may understand that they are waiting because other callers are ahead of them, this explanation can be made explicit. The experience of waiting becomes tolerable, and the stress of waiting is decreased, when wait times are explained in a way that is seen as fair and justifiable.[25] In addition, the explanation of the wait time provides an opportunity to reinforce that callers are not alone. After all, the existence of a queue means that other people are facing similar problems, which offers a chance to leverage **social norms** to increase the perceived desirability of staying on the line.

The power of behavioral science as a policy tool lies in its ability to shed fresh light on familiar problems and suggest innovative ways to tackle them. The work with NDVH is illustrative, as conventional approaches would address the resource limitations — for example, by hiring additional advocates to answer calls. However, in a period of limited budgets, programs will need to find creative and low-cost ways to serve clients better. The BIAS team will rigorously test the effect of a message

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24 Maister (1985) and Voorhees et al. (2009).
25 Maister (1985).

intervention that bundles several of the above variations (most of which involve managing the perception of wait time) in order to determine whether hang-ups can be managed in this low-cost, easily implementable way.

Can Behavioral Economics Be Effectively Applied to Human Services?

The BIAS project is still in its early stages of pilot-testing behavioral interventions using the rigorous methodology of random assignment. Only when tests of promising interventions have been completed will the team be able to speak authoritatively about the impact of these behavioral interventions on human services programs. Based on the existing literature, the effects of BIAS-style interventions are expected to be moderate in size but meaningful to program administrators because of the relatively large scale they can achieve for a relatively low implementation cost.[26] While it is too early to report impacts, the work to date has generated two broad insights: (1) it is valuable to closely observe a process, and (2) it is important to avoid premature solutions.

The Value of Close Observation of Process

The detailed consideration of the process by which services are offered has been shown to be a valuable exercise in its own right. With so many competing demands, program administrators often do not have the time to look closely at the way a program is being implemented after it is launched. As a result, administrators may rely on assumptions about what is happening in the field, and be surprised to discover the reality. As disorienting as this can be, it can lead to critical breakthroughs. In the experience of BIAS to date, simply looking closely at a program from the clients' and frontline staff's point of view can be very powerful, in terms of evaluating the processes against the ultimate goals of the program. It is particularly valuable to do this from a behavioral perspective — meaning in a way that focuses on decisions and actions that may be amenable to nudges — because this narrows the focus of observation to the kinds of bottlenecks that do not require substantial amounts of funding to fix, and points to some interventions that can be tested.

The Importance of Avoiding Premature Solutions

The BIAS team has learned to proceed systematically through the four phases of behavioral diagnosis and design in order to avoid jumping prematurely to intervention ideas without fully understanding the causes of hypothesized bottlenecks. This understanding comes from mapping the process from various points of view. It is tempting to immediately apply behavioral solutions that are relatively inexpensive and easy to implement. However, it is important to link the intervention idea to the possible psychological or behavioral reasons for the bottleneck, to the extent possible, because otherwise the intervention may be ineffective or even produce negative results.[27] That being said, the risk of misapplying behavioral economics to programs is mitigated when the program designers are engaged in ongoing performance monitoring or evaluation, and when they approach behavioral design as an iterative process — that is, a process that is repeated until a successful solution is found. Because behavioral diagnosis can lead to several hypothesized psychological bottlenecks and each one may be associated with more than one potential behavioral solution, this process should be seen as routine rather than as a one-time undertaking. This perspective embraces creative, client-centered approaches to service delivery.

Next Steps for the BIAS Project

Behavioral economics provides a new way of thinking about human services program design and a potentially powerful set of tools for improving program outcomes. The central insight of this science is that human services programs will be more effective if they take into account the psychological and behavioral tendencies that define human decision-making. The BIAS team will complete pilot tests of behavioral interventions in programs that are funded by the Administration for Children and Families in the areas of TANF, child care, child support, and domestic violence. Each pilot is being evaluated rigorously. Results will be published as they become available to further inform this burgeoning field.

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26 Allcott and Mullainathan (2010).
27 See Riccio et al. (2010), p. 109, and Bronchetti, Dee, Huffman, and Magenheim (2011).

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Introduction to Behavioral Economics

Many social programs are designed in ways that require clients to make active decisions and follow a series of steps in order to benefit — from deciding which programs to apply to, to completing forms, attending appointments, showing proof of eligibility, and arranging for travel and child care. Program designers often assume that individuals will carefully consider options, make decisions that maximize their well-being, and diligently follow through.

Behavioral economics helps to explain why these assumptions are not always borne out. Its practitioners study decision-making and action in the real world, combining insights from psychology, economics, and other related disciplines to describe what people actually do, rather than what they are expected to do according to theoretical models.[1] The field examines how people — clients and program operators alike — procrastinate, become overwhelmed by choices, miss important details, are swayed by subtle environmental cues, and rely on mental shortcuts to make decisions. Because of these tendencies, programs and the participants they serve may not always achieve the goals they set out for themselves.

Insights from behavioral economics suggest ways that a deeper understanding of human decision-making and behavior could improve program design and outcomes. Research in laboratory settings and some field tests have demonstrated that, for example, small changes in the environment can facilitate desired behaviors; a change in the way requirements or choices are worded may elicit greater self-control; and default rules, which provide a predetermined option that requires little action on the decision-maker's part, can increase the likelihood of making positive choices.[2] For example, behavioral economics principles have been used effectively to increase participation in 401(k) plans and registration in organ donation programs.[3]

However, there has been relatively little exploration of the potential application of this science to complex, large-scale human services programs. The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project, sponsored by the Office of Planning, Research and Evaluation of the Administration for Children and Families (ACF) within the U.S. Department of Health and Human Services, presents the first major opportunity to use a behavioral research lens to examine programs that serve poor and vulnerable families in the United States.[4] The project's overarching goal is to learn how tools from behavioral economics can improve the well-being of individuals and families served by programs supported by ACF.

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1   Gaining broad recognition in academic and policy communities, behavioral economics is a research subfield that started out by cataloguing violations to the "rational actor model" in economic theory, which presumes that individuals use all available information and make the best decisions in order to maximize the benefit that they will receive (Thaler and Sunstein, 2008). It is part of the broader field of behavioral science that encompasses the wide variety of disciplines that contribute to understanding human decision-making and action without necessary reference to rational action theory or markets.

2   Thaler and Sunstein (2008); Kahneman (2011).

3   See Madrian and Shea (2001) and Johnson and Goldstein (2003), respectively.

4   There has been relatively little exploration of the application of behavioral science to human services, although two exceptions are Hall (2008) and Jones (2010).

This report focuses on the early applications of behavioral economics in the BIAS project, which began in October 2010 and is expected to run through September 2015. It provides an overview of behavioral economics, presents an approach to applying behavioral economics to social programs, and shares insights from three case studies in the BIAS project. Psychological and behavioral terms that are relevant to the BIAS project are defined in the Appendix and appear in bold text when they are first mentioned in each chapter. Additionally, a separate Technical Supplement to this report provides a description of 12 commonly applied behavioral interventions identified through a review of the literature.[5]

Broad Lessons from Behavioral Economics

Policymakers often rely on economics as a tool for guiding strategy — whether explicitly basing program design on economic models, or implicitly assuming that program participants will make rational decisions to maximize their well-being. Neoclassical economics — that is, the conventional economics paradigm, as taught in introductory university courses — has served policymakers well because of its elegant predictions about collective and individual action. Central to this framework is the notion of "constrained optimization," where the economic agent (that is, the decision-maker) makes choices to achieve preferences as much as possible within the constraints imposed by income, costs, or time. Economic models can reliably predict a variety of outcomes, such as how much a large increase in the price of a commodity will decrease consumption, especially for those who have limited resources.

However, a growing body of evidence shows that neoclassical economic theory cannot, by itself, account for all the ways people behave in the real world. Studies have shown that preferences are affected by the context, such as the order in which choices are presented or whether a change in quantity is framed as a loss or a gain, as explained later in this report.[6] It has also been found that increasing the menu of options can be paralyzing for decision-makers rather than making them better off, as traditional economic theory assumes.[7] Behavioral economists assert that recognizing these tendencies can improve the design or marketing of programs, even those built around neoclassical economic principles like the manipulation of price (when, for instance, prices are adjusted to give the illusion of lower pricing, like charging $2.99 for something instead of $3.00),[8] by accounting for ways people respond to certain features of the environment.[9]

The field of behavioral economics has organized its findings in a variety of ways. There is no singular framework. Daniel Kahneman, one of the founders of the field, popularized the image of decision-making as a contest between two systems in the brain: an intuitive and fast system, and a deliberative and slow system.[10] Psychological research has found that people are likely to rely on the first system in certain situations, which leads to predictable deviations from the expectations of standard economic theory. Other researchers have focused more on the notion that in the same way a muscle becomes fatigued and inefficient with overuse, there are limits to the human capacity for attention, cognition, and self-control.[11] The following sections delve more deeply into the background and assumptions of behavioral economics.

Cognition

Neoclassical economic theory assumes that individuals have an unlimited capacity to think through problems carefully and compute the best solution.[12] This implies that when faced with a choice, people gather all the necessary information and weigh their options accurately no matter how many dimensions of evaluation are being considered and without being distracted by extraneous factors. The theory also implies that people are able to calculate probabilities to work out the best decision for the future, which is often uncertain. This sort of cognitive ease is central to the view of individual decision-making in economics — so central, in fact, that the *process* of making a choice often goes unexamined.

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5   See Richburg-Hayes et al. (2014), available at www.acf.hhs.gov/programs/opre and www.mdrc.org.
6   For studies on framing a change as a loss versus a gain, see Ganzach and Karsahi (1995) and Kahneman, Knetsch, and Thaler (1990). For studies on the order for which choices are presented, see Dayan and Bar-Hillel (2011).
7   Iyengar and Lepper (2000).
8   There is some evidence that consumers process prices by digit, beginning with the left-hand digits and frequently ignoring right-hand digits, and may also round down to achieve a price estimate. See Striving and Winer (1997).
9   Loewenstein and Ubel (2010).
10 Kahneman (2011).
11 This idea is known as *psychic scarcity* or *the psychology of scarcity*. See Mullainathan and Thaler (2000) and Datta and Mullainathan (2012).
12 See Mullainathan and Thaler (2000) and Mullainathan (2006).

Yet psychologists have shown that this picture of human thinking is inaccurate. Cognitive resources are limited and can be overwhelmed. Consider, for example, the phenomenon of **choice overload**, in which offering people more choices makes it harder, rather than easier, for them to choose anything at all. For example, one study found that increasing the number of different jars of jam on display in a supermarket reduced the likelihood that consumers would buy any of them.[13] Psychologists argue that choice overload arises because, when presented with a large range of potential options, individuals are unable to process all the dimensions of the choice.

Because of these limits on cognitive ability, people, in effect, "economize" on cognitive resources when making decisions. They rely whenever possible on fast, intuitive thinking, as if they are reserving deliberative thinking for special situations. In fact, completely and purposefully thinking through every decision would simply overwhelm a person's cognitive capacity.[14]

An interesting example of this phenomenon comes from an experiment that tested how clients of a major lender in South Africa reacted to changes in the presentation of loan offers.[15] These changes turned out to matter, contrary to the predictions of standard economics. The experimenters found clear evidence of choice overload: telling people about several different available loan terms and sizes instead of providing just one illustrative example reduced the take-up of loans just as much as an increase of 2.3 percentage points to the annual interest rate.

Issues related to the limits of cognition may be of particular relevance to programs in human services, where staff often give beneficiaries detailed orientations about rules, responsibilities, and procedures. This literature shows how, paradoxically, an abundance of information can stand in the way of understanding.[16]

Attention

People often speak casually of "paying attention." This common phrase captures the essence of what psychologists have learned about attention: it is a scarce mental resource and people have only a finite amount at any point in time. Therefore, "spending" this resource to perform one task reduces one's ability to perform other tasks that also demand attention.[17]

Striking experiments on **change blindness** — the inability to notice all visual stimuli at once — provide evidence for the limits of attention.[18] One example of a change blindness experiment involves asking subjects to watch a video and count the number of basketball passes made by a team wearing white jerseys, while ignoring the passes made by the team wearing black jerseys. The simple command to pay attention to one set of actors on the screen while ignoring others leads the majority of subjects to completely fail to notice a person in a gorilla suit who appears on the basketball court, thumps his chest, and then moves off camera.[19]

Behavioral research has also shown that people regularly forget, or neglect, to do important tasks whose benefits far outweigh their costs. These are failures of **prospective memory**, or forgetting to perform a planned action. This helps explain why choices are often "sticky." Once employees enroll in a 401(k) savings plan, for example, they rarely make changes to it.[20] Instead, the plan they selected first will persist for years, without regard to changes that may have occurred in personal circumstances or in the economy. Even if the original selection was optimal at the time, and people intend to make the changes when appropriate, they may fail to pay attention to their selections at critical moments, leading to poor outcomes.

In human services programs, like programs in other areas, clients must often be attentive to program schedules, deadlines, and paperwork requirements. Limited attention may explain why, in some instances, program participants fail to meet these requirements.

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13 Iyengar and Lepper (2000).
14 See Kahneman (2011) for a comprehensive survey.
15 Bertrand et al. (2010).
16 For an example in a field experiment, see Riccio et al. (2010), Chapter 4.
17 See Kahneman (1973); Kahneman (2011).
18 See, for example, Neisser (1979); Stoffregen and Becklen (1989); Grimes (1996).
19 See Simons and Chabris (1999) for a review of this literature.
20 See Choi, Laibson, Madrian, and Metrick (2004).

Self-Control

In the 1970s, psychologist Walter Mischel carried out the "marshmallow experiments" in which a series of young children were left alone in a video-monitored room with a marshmallow. The instructions they received were simple: if they waited for 15 minutes, they would get to eat the marshmallow and be rewarded with a second one. However, if waiting proved too difficult, they could give up at any point in the middle and eat only a single sweet. While all children initially decided to wait so they could receive both marshmallows, only about one-third of the children managed to wait for the full 15 minutes.[21] These experiments were among the earliest experimental demonstrations of the limits of self-control.[22]

Since the earliest experiments, behavioral scientists have gained a deeper understanding of self-control through a range of research. These experiments confirm that far from being unlimited, as economists assume, the amount of self-control that people have at any moment in time is limited. This means that exercising restraint in some way (for example, resisting tempting food, avoiding a cigarette, or saving money) actually depletes a person's available stock of self-control. For example, in one study, people who were asked to make a series of decisions (thus depleting their cognitive resources) were less persistent when asked to complete an unrelated cognitive task that also required self-control.[23]

Neoclassical economics does not distinguish between the decision (a mental process) and the behavior (an action) that manifests that decision. Instead, economists assume that actions reflect intentions, so, in their view, a failure to do something is a deliberate choice. But the limits on self-control help explain why people sometimes fail to follow through on decisions they have made, and why small **hassle factors** — or barriers to completing an action — can lead people to abandon tasks with benefits that vastly outweigh their costs.[24] The need to boost self-control with external devices explains a number of choices that might otherwise seem paradoxical, such as people signing up for savings accounts that limit their access to their own money.[25] To the extent that programs in human services, like other programs, require people to follow plans or to undertake actions that offer rewards in the future, the limits of self-control may help researchers understand why people don't always complete such actions. (Box 1.1 contains more information about interventions that have been tested in the field of behavioral economics.)

From Theory to Application: The BIAS Project

In summary, behavioral economics can shed light on decision-making and offer novel ways to improve outcomes by accounting for overlooked psychological factors. For example, parents seeking assistance in locating high-quality child care may receive a long list of providers that are rated by quality, and end up not choosing a quality-rated provider at all, possibly because they are overwhelmed by the number of choices.[26] Financial sanctioning in the Temporary Assistance for Needy Families (TANF) program is believed to encourage compliance by clients (based on the assumption that clients prefer to avoid a decrease in financial resources), yet many cases remain sanctioned for long periods of time, an outcome that traditional economics would not predict.[27] Behavioral economics offers a new way of thinking about solutions to these types of problems.[28]

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21   Mischel, Ebbesen, and Zeiss (1972).
22   Recent research has called the interpretation of this classic experiment into question; see McGuire and Kable (2012, 2013). McGuire and Kable (2013), for example, have shown that ambiguity on the part of the principal investigator may be the real cause of these findings, not the children's lack of self-control. That is, the children could have made rational decisions to eat the marshmallow because the investigator's instructions were uncertain and the language about how long the children would have to wait was vague.
23   Vohs et al. (2009).
24   See, for example, Bettinger, Long, Oreopoulos, and Sanbonmatsu (2009).
25   Ashraf, Karlan, and Yin (2006).
26   Chaudry, Henly, and Meyers (2010).
27   The prediction that sanctioning will increase compliance with TANF rules is based on the assumption that the monetary and nonmonetary costs of coming into compliance are outweighed by the monetary benefits of being in good standing.
28   Behavioral economics has already transformed certain areas of public policy. As mentioned earlier, insights from behavioral economics have led to wide-ranging changes in the way U.S. employers enroll employees in 401(k) retirement plans through widespread adoption of automatic enrollment with an option to decline, rather than the previous norm of requiring employees to take action to enroll; see Madrian and Shea (2001) for experimental findings, and see WorldatWork and the American Benefits Institute (2013) for businesses' increasing use of default options for their employees' 401(k) plans. Similarly, registration rates for organ donation have been shown to vary dramatically based on a simple change of defaults from "opt in" to "opt out" (Johnson and Goldstein, 2003). The UK Behavioural Insights Team has also implemented and evaluated a number of behaviorally informed interventions to address public policy concerns such as low payment of taxes and suboptimal energy usage (UK Cabinet Office Behavioural Insights Team, 2011, 2012).

BOX 1.1
COMMONLY APPLIED BEHAVIORAL INTERVENTIONS

In the early stages of the BIAS project, the BIAS team reviewed studies that tested behavioral interventions in eight areas: charitable giving, consumer finance, energy/environment, health, marketing, nutrition, voting, and workplace productivity. The review focused on field studies rather than lab experiments because they were believed to be most applicable to the evaluation stage of the BIAS project. The interventions were then categorized by type and counted, so that it is possible to characterize the frequency with which a particular intervention was tested both across and within domains. The 12 most commonly cited behavioral interventions are listed below. The Technical Supplement to this report describes each intervention and gives examples of how it has been applied.*

1. **Reminder:** Prompting individuals to notice a specific piece of information in order to increase the chance that they will act on that information.

2. **Social Influence:** Fostering a behavior through direct or indirect persuasion by a person of influence, such as an influential peer or an authority figure.

3. **Feedback:** Providing ongoing performance information to an individual about current behavior as a way to make that information salient and allow the individual to evaluate his or her own performance.

4. **Channel and Hassle Factors:** Adding a feature to the environment that makes a behavior easier to accomplish, or eliminating a feature that makes a behavior harder to accomplish, respectively.

5. **Micro-Incentives:** The use of small monetary payments (or fines) to reward (or discourage) particular behaviors.

6. **Identity Cues and Identity Priming:** An identity cue represents a person's connection to a particular social identity, like mother or supervisor. Identity priming is the attempt to influence behavior by highlighting a particular identity cue that is aligned with the targeted behavior.

7. **Social Proof:** Providing descriptive, factually accurate information about how peers behave in a similar situation.

8. **Physical Environment Cues:** Physical features of an environment that affect decision-making on an intuitive or subconscious level.

9. **Anchoring:** The intentional selection of a reference point designed to make nearby (or easily accessible) alternative choices more or less attractive.

10. **Default Rules and Automation:** Setting the outcome for an individual in the event that the individual takes no action after being given a choice.

11. **Loss Aversion:** Highlighting the loss a person may incur for a given action, or failure to act, rather than describing gains.

12. **Public or Private Commitment:** A pledge to carry out specified behavior or take actions necessary to achieve a specific goal.

* See Richburg-Hayes et al. (2014), available at www.acf.hhs.gov/programs/opre and www.mdrc.org.

The objective of the BIAS project is to learn how tools from behavioral economics can be used to improve the well-being of low-income and vulnerable populations served by ACF.[29] The project seeks to do this using a method called "behavioral diagnosis and design," which is described in greater detail in Chapter 2. The BIAS project partners with administrators from various social programs to identify a specific case where a program is not achieving its desired outcomes. The program administrators and BIAS team search for *behavioral* reasons — those related to human decision-making processes and action on the part of the clients or staff — for falling short of desired outcomes; use qualitative and quantitative data sources to better understand the reasons for bottlenecks, or barriers to program success; and evaluate the effectiveness of interventions designed to alleviate them.[30]

A key to improving program outcomes in this approach is to understand the experiences and context of the program's end users, and design programs to better address their perspective. In many cases the targeted users are clients, but some program improvements are directed at staff. Both groups of people are subject, in general, to the psychological and behavioral tendencies described in this chapter. Specific contextual and cultural factors may also affect their response to program incentives, which must be taken into account.[31]

Report Roadmap

This report provides insights from the early stages of the BIAS project. It is written in a modular fashion, meaning that it can be read in total or part, although Chapter 2 presents important background information on the approach used in the project for designing behavioral interventions. The report is organized as follows:

Chapter 2 describes how the BIAS project implements a behavioral diagnosis and design process to apply behavioral economics insights.

Chapter 3 provides a case study of behavioral diagnosis and design in the child support domain. Working with the Texas Office of the Attorney General's Child Support Division, the BIAS team explored ways to increase the number of incarcerated noncustodial parents who complete an application for a modification of their child support order, with the goal of reducing the amount of unpaid child support that accrues.

Chapter 4 provides a case study of behavioral diagnosis and design in the TANF domain. The BIAS team worked with the Illinois Department of Human Services and one of its contracted job search providers to identify behavioral interventions that could help increase the number of clients who engage in job search assistance.

Chapter 5 gives an overview of the behavioral diagnosis and design work conducted for the National Domestic Violence Hotline (NDVH), which is focused on reducing the call-abandonment rate, or the proportion of callers who reach a prerecorded "hold" message but hang up before talking to an NDVH staffer.

Chapter 6 concludes with some early lessons that have emerged from the work and next steps for the project.

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29   In some ways, the BIAS project is similar to the UK Behavioural Insights Team in that the goal of BIAS is to produce evidence-based practice that embraces new ways of thinking about solutions to public policy problems. (See www.gov.uk/government/organisations/behavioural-insights-team.)

30   The project focused on relatively low-cost, easy-to-administer modifications to program design that are informed by behavioral economics, not on creating new programs or making major investments of funding.

31   Scarcity, of time or material resources, creates a specific context for action that program designers should consider. A recent branch of research demonstrates that when resources are scarce, distinct behavioral patterns emerge. People allocate attention differently in such circumstances, leading them to perform better on some decisions while systematically neglecting some consequences or ignoring other decisions (Shah, Mullainathan, and Shafir, 2012).

CHAPTER 2

An Introduction to Behavioral Diagnosis and Design

This chapter provides background information on the approach that the Behavioral Interventions to Advance Self-Sufficiency (BIAS) project uses for designing behavioral interventions. It explains how behavioral economics can be used to improve human services programs generally and how the BIAS project implements a "behavioral diagnosis and design" process to apply behavioral economics insights.[1] Throughout the chapter, terms from behavioral science appear in bold when they are first mentioned. These terms are explained in greater detail in the Appendix.

How Can Behavioral Concepts Be Applied to Human Services?

Behavioral economics reveals that while human behavior often contradicts the calculations of traditional economics, it nonetheless follows somewhat predictable patterns. How can this understanding be used to enhance human services programs?
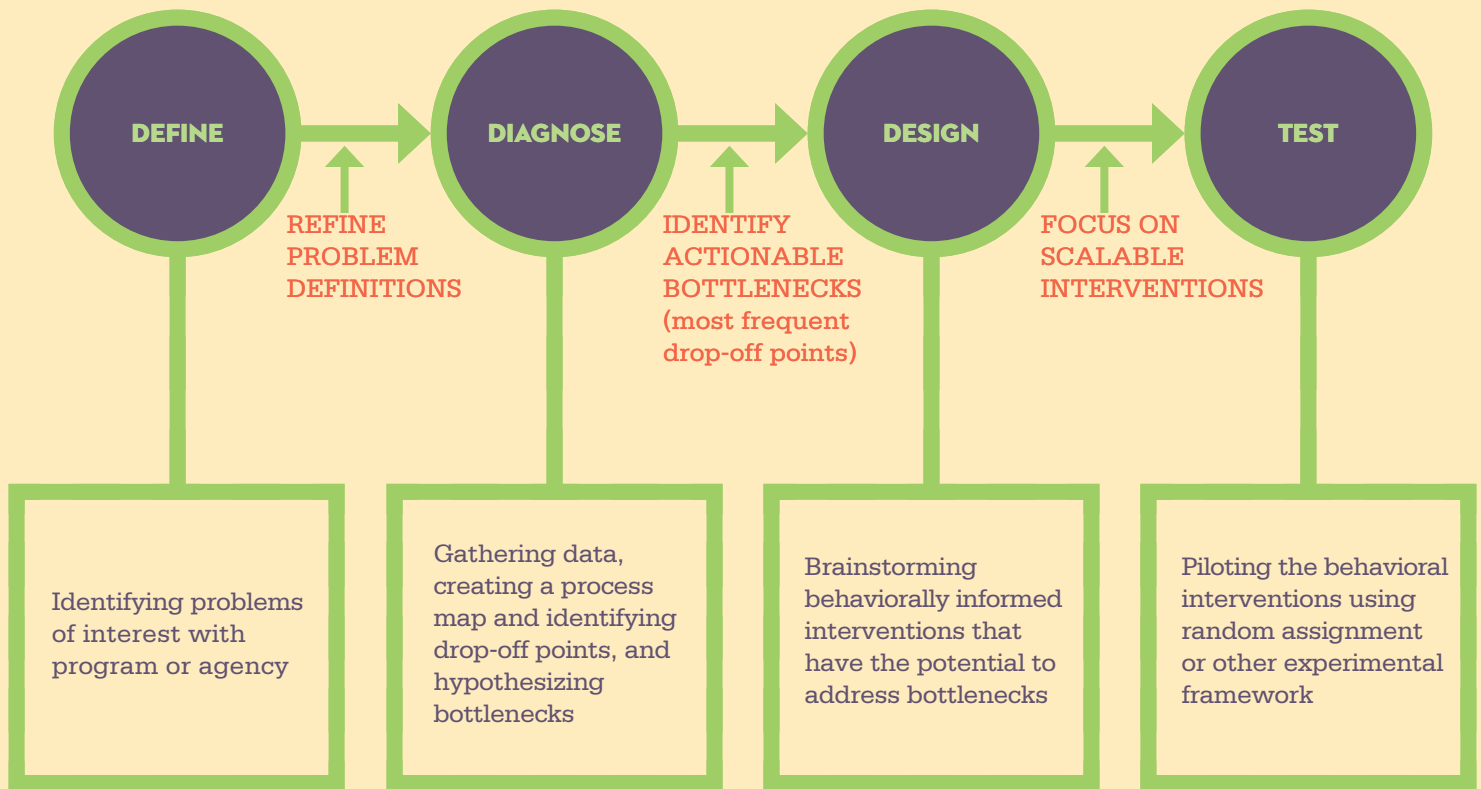
The BIAS project's approach to applying insights from behavioral economics to human services programs is to develop a detailed understanding of the context in which the program will be implemented. Behavioral diagnosis and design is a method of delving deeply into a given problem to diagnose potential behavioral bottlenecks that are impeding success and to identify areas where a relatively quick, easy, and low-cost, behaviorally informed change might improve the process. It is important to approach this work methodically because recognizing that a behavioral issue may be affecting program outcomes is not enough to find a solution to the problem.

Take, for example, the case of child care Quality Rating and Improvement Systems (QRIS). Over half of this country's states have a QRIS, and almost all the rest are planning to implement one.[2] A QRIS rates child care providers on their level of quality; it is meant to provide a framework for objectively determining the level of quality and to provide parents with the information necessary to choose providers. States have different goals for their QRIS, but they typically help parents better understand and demand a higher level of care, while encouraging providers to engage in continuous program improvement. Yet, some administrators have noted that despite their investments in QRIS and the high proportion of parents who report caring about the quality of child care, they do not always see a high level of demand for quality-rated providers. The question is: What is the nature of the bottleneck that is impeding parents from using the QRIS ratings to inform their

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1   Staff from ideas42 partnered with MDRC during the early phases of the project to shape the work described throughout this report. They developed a methodology called "behavioral diagnosis and design" for applying insights from behavioral economics to improve programs and achieve impacts on a large scale. The process that is described in this report, also called behavioral diagnosis and design, is a version of that same process that has been adapted for the BIAS project.

2   Tout et al. (2010), p. 1.

FIGURE 2.1
THE BEHAVIORAL DIAGNOSIS AND DESIGN PROCESS

DEFINE → **DIAGNOSE** → **DESIGN** → **TEST**

REFINE PROBLEM DEFINITIONS

IDENTIFY ACTIONABLE BOTTLENECKS (most frequent drop-off points)

FOCUS ON SCALABLE INTERVENTIONS

Identifying problems of interest with program or agency	Gathering data, creating a process map and identifying drop-off points, and hypothesizing bottlenecks	Brainstorming behaviorally informed interventions that have the potential to address bottlenecks	Piloting the behavioral interventions using random assignment or other experimental framework

SOURCE: This figure was adapted from a figure created by ideas42.

child care choices? Do parents not understand the ratings, fail to see the value of the ratings, not know how to find rated providers, or fail to follow through on their intentions to do so? Or is the bottleneck something else?

This chapter provides an overview of the process that the BIAS project uses to answer such questions about the nature of behavioral bottlenecks in order to generate possible behaviorally informed solutions.[3]

Behavioral Diagnosis and Design Approach

As presented in Figure 2.1, the behavioral diagnosis and design process consists of four phases. While the figure depicts a linear process, in practice the process is iterative and may require multiple cycles of diagnosis and testing. The approach aims to pinpoint the problem, identify bottlenecks, and hypothesize about which psychological concepts may explain why a program is not achieving the desired outcome, in order to maximize the potential for an intervention to be effective.

Definition Phase

The behavioral diagnosis and design process begins with carefully defining a problem in terms of the desired outcome, without making presumptions about the cause. Consider the following ways of framing the same general problem, related to child care quality rating and improvement systems, discussed earlier:

1. How can the program make parents realize that enrolling their children in quality-rated child care is important?

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3   While the approach discussed in this chapter is systematic, there is no guarantee that these interventions will improve outcomes. Later stages of the BIAS project will test whether the interventions are effective. Behavioral economists have proposed other methodologies for applying behavioral economics to social programs and public policy dilemmas. See the MINDSPACE approach, which catalogs a set of powerful intervention techniques as the starting point for program design (Dolan et al., 2010), and "A Practitioner's Guide to Nudging" (Ly, Mažar, Zhao, and Soman, 2013), which emphasizes conducting an audit of the decision-making process from the user's point of view to understand bottlenecks and identify opportunities for introducing subtle program changes that could improve outcomes.

2. How can the program make it easier for parents to choose a rated child care provider?

3. How can the program improve the quality of care for all children?

4. How can the program increase the number of parents who enroll their children in rated child care?

The first and second problem statements assume that parents do not choose rated providers because they do not realize that doing so is important or because it is difficult. These assumptions may make it challenging to design successful interventions, because they may turn out to be incorrect or true for only a small portion of the target population. The third problem statement is too broad. The ways to improve quality for all children are vast and complex; starting with such a general statement would make it difficult to develop a targeted and specific solution. The last statement is the strongest — it defines a specific and measurable outcome and does not contain any premature causal explanations.

Diagnosis Phase

The diagnosis phase consists of gathering data, creating a "process map" and identifying points when potential participants drop out, and hypothesizing bottlenecks that might be hampering participation and program effects.

Gathering Data

After a problem statement is crafted, the BIAS team collects both qualitative and quantitative data to explore the identified problem. The data needed for behavioral diagnosis are specific to the program area and context. These data are used at several points in the diagnosis phase, for the purposes of creating the process map (explained below) and hypothesizing about bottlenecks and psychological barriers that may be affecting program outcomes.

Qualitative data come from interviews with program administrators, frontline staff, and clients to gain an understanding of how the process is viewed from each of their perspectives. In addition, the team reviews program documents such as annual reports, process and organizational flow charts, policy manuals, scripts and presentation material used by staff, and client intake forms.

The team also collects quantitative data, when available. Generally, the BIAS team collects statistics on the number of clients served, as well as the size and nature of the identified problem. For example, in the behavioral diagnosis and design work in the child care domain, the identified problem was parents' lack of demand for quality-rated child care programs. Therefore, the team needed to know what percentage of parents were enrolling their children in a quality-rated program. Management information system data can be used to search for correlations among client characteristics, program inputs (for example, services received), and outcomes.

See Box 2.1 for a summary of the behavioral diagnosis and design process used with the Maine child care quality rating systems.

Creating a Process Map and Identifying Drop-Off Points

Once the team members have collected sufficient data, they map the program's process from multiple points of view, including the client's perspective, which is important. What decisions must individuals make and what actions must they take to achieve the desired programmatic outcome? A list of points that indicate where the client interacts with the program is a good place to start, but choices often occur outside of program offices that are not captured in program records. For example, in the work in Illinois with Asian Human Services (AHS), a job search contractor, the team learned that clients needed to secure child care before beginning their job search. While child care is very important for stable work and concentrated job search, this aspect was part of the TANF case workers' responsibilities and beyond the purview of AHS. When possible, the map captures relevant decisions and actions that do not occur directly as part of the program process.

Once the process map is complete, an investigation begins about which choices are hindering attainment of the desired outcome. Program data are helpful in uncovering where drop-offs may occur, but it is also important to understand *why* drop-offs occur. For example, in a multistep program where attendance information is captured at each juncture, program data will show when significant attrition occurs within a given cohort. Consistent patterns of drop-off suggests that participants are encountering systematic barriers.

BOX 2.1

QUALITY-RATED CHILD CARE:
MAINE OFFICE OF CHILD AND FAMILY SERVICES

In addition to the work described in Chapters 3, 4, and 5 of this report, the BIAS team initiated behavioral diagnosis work related to child care with the Office of Child and Family Services (OCFS) in the Maine Department of Health and Human Services. Among other programs and services, the OCFS helps parents find child care providers by offering referrals through an online search engine and telephone hotline; administers the child care subsidy program; and oversees *Quality for ME*, the Quality Rating and Improvement System (QRIS) for child care providers. Maine is one of a growing number of states implementing a QRIS. Maine's four-step program aims to encourage providers to achieve higher levels of quality, and to make standards of quality more recognizable to parents.

When the BIAS team first began working with this partner, OCFS's goal was to use insights from behavioral economics to increase the number of parents across the state who choose quality-rated care. Limitations in available, appropriate data led the team to concentrate on encouraging parents who use the state's online search engine to choose providers participating in *Quality for ME*. The search engine allows parents to input a zip code, city, or address, and instantly receive a list of providers organized by rating, with the highest-rated program at the top. Users can filter the list by the type of provider and ages served.

The BIAS team reviewed statistics on the Web site's user traffic and the other content for parents that is available on the same Web page. The team found that the Web site received about 420 unique users per month (that is, about 420 separate "hits," each from a different person). The team identified three hypothesized behavioral bottlenecks that could relate both to the low use of the site and its effectiveness at marketing the QRIS: (1) trust and social norms, (2) different angles on choice, and (3) limited cognition.

Bottleneck 1: Trust and social norms refers to parents' tendency to favor child care referrals that they receive from trusted family and friends.* The strong institutional credentials of the Web site may not overcome the user's distrust of impersonal referral information when it comes to child care. The BIAS team recommended that the OCFS leverage trusted sources in two ways. First, staff could build trust in the Web site by creating partnerships with pediatricians, employers, and schools to disseminate information about the QRIS and the ability to find referrals through the Web site. Second, they could add a social component to the Web site by incorporating text such as, "Ask your friends about this provider" next to rated providers on the referral list, and enabling the Web site to communicate with other social networking platforms such as Twitter and Facebook. This would allow parents who are unfamiliar with a rated child care provider to know whether anyone in their social network has experience with that provider.

Bottleneck 2: Angles on choice points to the fact that the decision-making process involves weighing multiple factors and determining how to use this information to pursue a course of action. In the case of child care, parents weigh factors like cost, quality, and accessibility in complex and individualized ways. The Web site does not display information in a way that accommodates the user's unique informational needs. When searching the Web site for child care providers in a particular geographic location, users can filter search results by the type of provider (family- or center-based) and ages served (infants, toddlers, preschool, or school-age), but not by factors such as price, operating hours, accommodation for special needs, languages spoken, and access to mass transit. The BIAS team recommended that the OCFS help parents see other angles on their choice by allowing parents to input more of the search criteria that matter to them.

Bottleneck 3: Limited cognition refers to the constraints on people's ability to process, understand, and recall information, in this case, about the quality rating system. Users need easily accessible information about the meaning of the four steps in the *Quality for ME* system, and what standards distinguish providers at different levels. The Web site provides a visual "legend" with icons representing each step stacked vertically from "non-QRIS" to Level 4. This is a good way of showing that Level 4 is the highest level of quality (although using the term "QRIS" in the legend may confuse users who are not familiar with the acronym). Information about quality standards associated with each step is available on the Web site, but not on the "Search for Child Care" Web page. As a result, parents need to recall the standards for each step while looking at another part of the site. This is difficult — there are, for instance, 16 standards for a "step four" program. Simply making that information accessible on the same page as the search results makes it easier for parents to incorporate *Quality for ME* information into their decision-making process. This could be done by using pop-up windows next to the description of the provider quality rating to give examples of the standards the provider must meet to qualify for that rating.

* Chaudry et al. (2011).

Hypothesizing Bottlenecks

Program staff or researchers generate a set of hypotheses about the psychological or behavioral reasons for particular drop-off points. For example, is the target population being inattentive to program details, or are they overwhelmed by too much information? Since clients' thoughts and feelings are often private and un-observable, it is rarely possible to explain behavior with certainty. However, collecting additional program data may help to eliminate or bolster certain hypotheses. For example, if program administrators hypoth-esized that parents were not choosing quality-rated providers because there were none in their area, data could either confirm or refute this hypothesis. Once the process map has been updated with hypothesized psychological factors, the result is a behavioral map.[4]

Design Phase

Once hypotheses about the nature of the psychological or behavioral bottlenecks have been identified, the design phase begins as the team considers which behavioral interventions might work to overcome these issues. (They might use, for example, the 12 interventions listed in Box 1.1 in Chapter 1 and described in the Technical Supplement to this report,[5] or the approaches described in Chapters 3 through 5, as resources for intervention ideas.) It is important to have clear hypotheses about the behavioral issue that is hindering action before implementing behavioral interventions, because an intervention that may be effective at addressing one behavioral issue may have no effect on another.

Table 2.1 illustrates how or why a given intervention may work for a particular problem but not for others.[6] For instance, the table shows that procrastination is linked to several types of interventions. If the underlying assumption is that follow-through is being hindered by procrastination, this may lead to an intervention based on **defaults, forced choice, reminders,** or **plan-making**.[7] A default plan sets up a specific, predetermined option for participants and requires no action from them, while a forced-choice ap-proach provides no default but does not allow participants to move forward until they have made a selection. A plan-making intervention might ask a person to set a schedule for completing the task, whereas a reminder may prompt the person to complete the desired action. These are two different interventions that may both be effective if the underlying psychology is procrastination. However, if in fact the action is hindered because of the role one plays at any given moment, for example (shown as "identity" in the last row of Table 2.1), a reminder or plan-making intervention is not likely to be successful. Jumping to conclusions early on in the process (such as assuming that the person wants to complete the task but is simply putting it off) may lead the intervention down the wrong path.

Testing Phase

It is essential to embrace an attitude of experimentation in this type of work because the ultimate goal is to determine whether an intervention is effective. The first behavioral intervention that is implemented might not have the desired effect, or the underlying psychology creating the bottleneck may be different from what was initially hypothesized. Testing behavioral interventions using rigorous scientific methods is a crucial step in the process. This is true because a well-intentioned intervention may cost money without generating results, or may be harmful, so that implementing it is worse than doing nothing at all. The behavioral diag-nosis and design process aims to articulate a rationale for a given intervention and fill in the gaps between problem identification, proposed behavioral concepts, and intervention ideas.

In the BIAS project, most behavioral interventions will be tested using a random assignment design, where some portion of a given sample (the treatment or program group) will be offered the intervention, and

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4   For examples of a behavioral map, see Figure 3.1 in Chapter 3, and Figure 5.1 in Chapter 5.

5   Richburg-Hayes et al. (2014), available at www.acf.hhs.gov/programs/opre and www.mdrc.org.

6   Table 2.1 illustrates one framework for connecting hypothesized thoughts and feelings to behavioral interventions. Other frameworks include identifying an underlying psychology to be one of action or decision (a methodology developed by ideas42), requiring de-biasing or re-biasing (removing or inserting, respectively, a potential bottleneck, also developed by ideas42), or determining whether economic or psychological taxation is involved (Miller and Prentice, 2013). Loss of self-respect, public respect, and self-esteem are examples of psychological "taxes," while boosts to this same set are examples of psychological "subsidies."

7   See Masicampo and Baumeister (2011) for a discussion of plan-making. See Johnson and Goldstein (2003) for a discussion of mandated or forced choice in the area of organ donation.

TABLE 2.1

CONNECTION OF BEHAVIORAL DIAGNOSIS TO INTERVENTION DESIGN

HYPOTHESIZED BEHAVIORAL CONCEPT THAT COULD EXPLAIN A BOTTLENECK	PROPOSED INTERVENTION									
	Change Choice Set	Reframe Choices	Reduce/ Categorize Choices	Use Defaults	Force Choices	Use Reminders	Promote Plan-making	Remove Hassle Factors	Change Comparison Group	Change Identity Priming Elements
Mental accounting	✔									
Loss aversion		✔								
Discounting		✔								
Choice conflict			✔	✔	✔					
Procrastination				✔	✔	✔	✔			
Automaticity, forgetting				✔	✔	✔	✔			
Hassle factors				✔	✔		✔	✔		
Social norms									✔	
Identity										✔

SOURCE: This table is adapted from a graphic created by ideas42.

the other portion (the control group) will not be eligible for the intervention and will continue with "business as usual." Randomized controlled trials are considered the most rigorous form of evaluation and one of the most accurate ways to detect an impact of a given intervention. There is always some amount of uncertainty in the behavioral diagnosis and design process, so it may be necessary to conduct several rounds of experimentation to test behavioral interventions that differ in large or subtle ways.

Conclusion

The behavioral diagnosis and design process provides a way to understand and address situations where programs are not performing as desired because of behavioral issues. The process described in this chapter encourages program designers to take a step back and examine multiple possible explanations for poor outcomes before embracing a particular theory or solution. The true benefits of this approach will be tested in the BIAS project. The project may be able to speak more authoritatively once the experiments have concluded and results are available. The next three chapters provide detailed case studies of the behavioral diagnosis and design process in practice, including potential areas for behavioral interventions.

Increasing Applications to Modify Child Support Orders Among Incarcerated Noncustodial Parents: Texas Office of the Attorney General — Child Support Division

This chapter applies the behavioral framework discussed in Chapter 2 to a specific issue identified by the child support agency of Texas related to applications for modifying child support orders.[1] It begins with an overview of the impact of child support debt on the population of interest — incarcerated noncustodial parents (NCPs). The behavioral diagnosis and design process used in Texas is then explained and behavioral bottlenecks are described. The chapter concludes with intervention implications and next steps. Throughout the chapter, terms from behavioral science appear in bold when they are first mentioned. These terms are explained in greater detail in the Appendix.

Policy Relevance of Child Support Arrears for Incarcerated Noncustodial Parents

Fifty-five percent of inmates in state prisons have children under the age of 18, and about half of incarcerated parents owe child support.[2] A large proportion of federal and state inmates who are noncustodial parents have a limited ability to pay their child support. This can lead to the accumulation of significant child support debt. One study projected that the average incarcerated NCP would leave prison with more than $20,000 in unpaid child support — an amount that poses a serious barrier to reentering society and obtaining regular employment after release.[3] Child support arrearages can affect a noncustodial parent's ability to obtain rental housing, buy a car, or get certain jobs, and increases the likelihood of working "off the books" to avoid wage garnishment.[4] These outcomes do not support the ultimate goal of responsible parenting.[5] Additionally, state child support enforcement agencies are typically unable to collect on the monthly obligations of incarcerated noncustodial parents, affecting federal performance outcomes of those agencies.

Many state child support enforcement agencies have recognized these issues and launched initiatives to "rightsize" the orders of incarcerated NCPs. Studies have shown that, in general, noncustodial parents are more likely to meet their child support obligations when the amount owed is set at a level that

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1   Chapter 2 of this report discusses the framework. In summary, behavioral diagnosis and design is a process for systematically developing behavioral interventions. It consists of four phases: defining the problem to be addressed, diagnosing all potential behavioral bottlenecks, designing behaviorally informed interventions to address the identified bottlenecks, and testing whether the interventions work using random assignment.
2   Council of State Governments Reentry Policy Council (2005); Griswold and Pearson (2003); Office of Child Support Enforcement (2012a); Glaze and Maruschak (2008).
3   Thoennes (2002).
4   Turetsky (2007); Office of Child Support Enforcement (2012a); Richer et al. (2003).
5   Baer et al. (2006); Turetsky (2007).

seems attainable to pay.[6] The majority of states have adjusted their laws to allow incarcerated NCPs to apply for modifications to their child support orders.[7]

For several years, the Family Initiatives section within the Child Support Division in the Texas Office of the Attorney General (OAG) has operated a small program that invites a select group of incarcerated noncustodial parents to request an order modification by mail on the basis of a substantial change in their financial circumstances. The OAG sends letters to incarcerated NCPs informing them of the option to apply for child support order modifications and providing instructions on how to initiate the process.[8] The OAG's data show that the average incarcerated NCP who receives a mailing owes over $18,000 in arrears and has a monthly order of about $240. Despite the apparent need of these inmates for order modifications, the response rate has been low, which suggests possible behavioral bottlenecks. The OAG partnered with the Behavioral Interventions to Advance Self-Sufficiency (BIAS) team in March 2012 to use behavioral economics insights to attempt to increase the number of incarcerated NCPs who submit complete applications for order modifications in response to the OAG's invitation.

Behavioral Diagnosis and Design

An analysis of OAG administrative records demonstrated that about 31 percent of eligible inmates to whom the OAG sent letters in May 2011 had submitted a modification form within one year.[9] Almost all who chose to complete the form did so within 100 days of the letter being sent. Inmates who owed a higher amount of child support were more likely to complete the form, and smaller prisons had better rates of completion than larger prisons.[10] Over 7 percent of completed applications had to be sent back because they had not been notarized as required, and 95 percent of those individuals did not resubmit a notarized application.

Given the benefits of responding, the low response rate suggests that bottlenecks likely exist that are delaying or preventing the return of completed submissions. A noncustodial parent who receives a letter from the OAG must complete the following steps to submit an application:

- Complete the application, which includes two forms — a "Request to Modify or Lower the Child Support Order" and an "Affidavit of Income and Assets."

- Request an appointment with the prison's law librarian.

- Meet with the law librarian. (The law librarian notarizes the affidavit during the appointment.)

- Mail the completed and notarized application to the OAG in a prepaid envelope that is provided with the letter.[11]

Figure 3.1 illustrates the process from the point of being identified as eligible for a modification to forwarding the application to the field office.[12] As demonstrated in the figure, individuals tend to drop off

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6   Office of Inspector General (2000); Formoso and Peters (2003).
7   States that permit the reduction of support orders for incarcerated parents include Alabama, Alaska, Arizona, California, Colorado, Connecticut, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming. However, child support enforcement regulations and policies vary by state and in some states judges will not hear cases of order modifications for incarcerated noncustodial parents, because incarceration is viewed as a type of voluntary unemployment. See the Child Support Fact Sheet Series on "Realistic Child Support Orders for Incarcerated Parents" in Office of Child Support Enforcement (2012a, 2012b).
8   This approach was necessary because the OAG does not initiate modifications without the request of the noncustodial parent.
9   Of these, approximately 20 percent received a modification as of spring 2012. However, as of that time, many were still awaiting a hearing.
10   Incarcerated noncustodial parents were often detained in state or privately operated prisons and jails. A small number of inmates had addresses in other types of facilities, such as transfer facilities (holding facilities until they are moved to a permanent location) or secure substance abuse or mental health programs. In this report, the term "prison" is used to describe all these facilities.
11   The OAG Family Initiatives section reviews the application and ensures that the required information is complete. Family Initiatives forwards the completed application to the appropriate local field office, which then determines which court will review the child support modification request.
12   Figure 3.1 is a "behavioral map" because it also records the hypothesized biases believed to be present in the OAG's process for offering NCPs the opportunity to request modifications to their child support orders. After the application is submitted to the field office, several steps must be taken before a modification can be granted. These steps are discussed later in the chapter.

FIGURE 3.1
BEHAVIORAL MAP FOR REQUESTING MODIFICATION OF A CHILD SUPPORT ORDER
TEXAS OFFICE OF THE ATTORNEY GENERAL — CHILD SUPPORT DIVISION

STAFF PROCESS

NCP PROCESS

HYPOTHESIZED BEHAVIORAL REASONS FOR THE BOTTLENECK

OAG IDENTIFIES NCP AS ELIGIBLE FOR MODIFICATION AND SENDS LETTER EXPLAINING HOW TO APPLY

NCP receives packet — NO → Problem with the mail system (structural bottleneck)[a]

NCP opens the packet — NO → Deliberation costs, affective response, ostrich effect

NCP reads the packet — NO →

NCP understands next steps — NO → Cognitive load, deliberation costs

NCP decides to act — NO → Identity, deliberation costs, psychological distance

NCP fills out application — NO →

NCP requests meeting with law librarian — NO → Procrastination, present bias, hassle factors, prospective memory failure

Facility schedules meeting with NCP → NCP meets with law librarian — NO → Hot-cold empathy gap

Law librarian notarizes application → NCP mails application — NO →

OAG receives and reviews application → NCP notarized and filled out application correctly (as determined by OAG) — NO → Hassle factors

OAG FORWARDS APPLICATION TO THE FIELD OFFICE

SOURCE: Figure based on MDRC and ideas42 initial fact-finding work with OAG staff.
NOTES: OAG = Office of the Attorney General; NCP = noncustodial parent.
[a]Structural bottlenecks are not associated with any behavioral concept, but are included here for illustrative purposes.

from the process at several points between receipt of the letter and submission of a completed application. A recipient may not open the letter at all, or may open it but choose not to read it, or may read the letter but choose not to request a modification. Each of these situations represents a drop-off point with potentially different implications for behavioral interventions.

Hypothesized Bottlenecks and Behavioral Concepts

During the diagnosis and design process, several potential bottlenecks were uncovered. One issue that the OAG recognized was that a portion of incarcerated NCPs' mailing addresses were incorrect. In many instances, the individual had moved from one prison to another and the address had not been updated. An incorrect address is undoubtedly a bottleneck to receiving a child support modification letter. While this is a critical bottleneck, it is not *necessarily* behavioral. It could have been that staff were forgetting to update the addresses in the system, in which case a behavioral intervention, such as a **reminder** or a simple nudge, may have aided in this task. However, in the OAG's case, the issue was classified as more of an administrative or structural bottleneck — there was an error in the database that was fixed, and the OAG implemented an additional verification step to ensure addresses were checked for accuracy before mailing the letter. The remaining bottlenecks discussed below are behavioral in nature.

▶ **Bottleneck 1: The NCP receives the letter, but does not open it, or opens it but chooses not to read it.** Inmates receive a large amount of mail, and they have to choose which letters to open, read, and act upon.[13] The **deliberation costs** — the costs of making a decision, in time or mental effort — may be too high to open and examine the letter. The primary communication that the OAG has with incarcerated noncustodial parents is through the mail system. The OAG logo on the envelope of the letter may immediately elicit a negative **affective response** (where the decision to forgo applying is driven by a "gut" emotion) and the **ostrich effect** (the tendency to avoid information one does not wish to know) because the NCP expects the letter to contain unwanted or unpleasant information about child support.

▶ **Bottleneck 2: The recipient reads the letter, but does not understand it.** The letter is written at a reading level that some NCPs may not understand because of illiteracy or comprehension challenges. Feedback from law librarians revealed that many inmates found the letter confusing. If NCPs do not have the reading level to comprehend their letters (for example, if English is not their first language), this is a bottleneck that may need to be addressed. Even when the recipient has an appropriate reading level, if the letter is written in a confusing manner, the **deliberation cost** (the time and mental effort required) includes the effort to understand the letter. If the letter takes too much mental effort to comprehend, the recipient may choose not to move forward with the process. Additionally, the letter may cause emotional distress related to the NCP's role as a parent, draining mental resources. Unclear language would only further increase the individual's **cognitive load** (or overburdened mental resources) associated with completing an order modification.

▶ **Bottleneck 3: The NCP may decide not to act on the letter.** The letter mentions several times that the recipient is incarcerated, highlighting the NCP's identity as an inmate rather than a parent. This increases the saliency of the individual's identity as a prisoner (**identity priming**) and may reduce the motivation to act.[14]

Recipients of the letter might assume that they will not receive a modification because the accompanying information about the steps of the process is complicated — the time and mental effort needed to make a decision might be high, and they may not find it worth their time to investigate the process further.

Additionally, NCPs only experience the benefits of receiving a downward modification after they are released from prison, which could be several years in the future. Events that occur far in the future are both temporally and **psychologically distant;** as a result, they tend to be perceived in abstract terms.[15] This can make it difficult for inmates to invest effort now to apply for a modification.

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13   The Texas OAG described the volume of mail.
14   Numerous experiments have been conducted showing the impacts of priming negative identities. See Shih, Pittinsky, and Ambady (1999) and Steele (1997).
15   Pronin, Olivola, and Kennedy (2008).

▶ Bottleneck 4: The NCP might decide to act, but fail to take the next step of requesting an appointment. The inmate may read the letter and think it is a good idea, but procrastinate or exhibit some degree of **present bias** (the tendency to put more weight on short-term preferences than long-term benefits). Furthermore, all human beings have **limited cognition** — a bounded capacity to process, understand, and recall information. Requesting an appointment with the law librarian may also be an event that is out of the norm. In addition, the inmates might forget about requesting an appointment with the law librarian because of **prospective memory** failure, or a failure to remember an event that is planned for the future — a likely scenario, as, again, such an event is not part of their routine.

Small obstacles, or **hassle factors**, are associated with scheduling an appointment with the law librarian and completing an application that requires detailed information. Other aspects associated with being incarcerated may add to the burden of completing the process — for example, noncustodial parents might need to gather information required on the application from family members, but must wait until they are able to talk with those family members.

▶ Bottleneck 5: The NCP might make an appointment to meet with the law librarian, but fail to show up for the meeting. Once the appointment time comes around, the inmate may not be in the same state of mind as when the appointment was made. There is a lag of at least 24 hours between the time when the appointment is scheduled and when it occurs. This lag creates the conditions for a **hot-cold empathy gap** — or a difference between the emotional state of the individual when forming the intention to complete the application and when doing the work of actually going to the appointment and filling out the form.

▶ Bottleneck 6: The NCP attends the appointment, but does not successfully submit the application. Once at the appointment, the NCP may realize that all fields on the application are not complete. The NCP will need to complete the application and come back at another time for the law librarian to review it and notarize the relevant form. The notarization process is an additional hassle factor.

Implications for Intervention Design

Table 3.1 depicts the possible linkages between bottlenecks and hypothesized behavioral concepts (or psychological influences), and between behavioral concepts and proposed interventions. As is evident from this table, various considerations likely influence the NCP's decision, and the proposed interventions may affect several of the hypothesized behaviors or beliefs. In other words, the correspondence between hypothesized concepts and intervention ideas is not one-to-one. An NCP's failure to open or read the OAG's letter, for example, might be caused by high deliberation costs or the ostrich effect, which in turn could be addressed by sending a teaser postcard before mailing the offer letter in order to familiarize the NCP with the idea — an example of applying the **mere-exposure effect,** or a preference for what is familiar.

The BIAS team explored the possibility of changing the **default**, or predetermined option, for NCPs who are invited to apply for a child support order modification. A default option could have been, for example, to automatically begin an application for an order modification for any noncustodial parent upon incarceration. In that case, a letter would be sent to NCPs explaining that an application to modify their child support order would be initiated on their behalf if they did not state an objection, and the case would immediately be sent to the field office. This would have eliminated hassle factors associated with completing the application. However, in practice, changing the default was not a possibility. The OAG does not have all of the information needed to start a modification request — the inmates need to provide background information on their work history, savings, and so forth. The application must be notarized in order to be submitted to the court as evidence. Most important, state legislation is required in Texas to automatically suspend a child support order for incarcerated noncustodial parents. For these reasons, the OAG and the BIAS team chose to simplify the application process using behavioral economics principles, but still require NCPs to assert that they would like the order to be modified.

Based on the behavioral diagnosis and design process, the BIAS team proposed a package of behaviorally informed changes to the application process. The components of the intervention are described below. The BIAS project evaluated these interventions using a random assignment design. Incarcerated noncustodial parents who were identified as eligible for the intervention were randomly assigned to receive either

TABLE 3.1

HYPOTHESIZED RELATIONSHIPS OF BOTTLENECKS, BEHAVIORAL CONCEPTS, AND COMPONENTS OF THE INTERVENTION

TEXAS OFFICE OF THE ATTORNEY GENERAL — CHILD SUPPORT DIVISION

HYPOTHESIZED BOTTLENECK AND POSSIBLE BEHAVIORAL CONCEPTS	PROPOSED INTERVENTION COMPONENT[a]						
	Harness Mere-Exposure Effect	Change Identity Priming Elements	Use Social Influence	Reframe	Reduce Cognitive Load	Remove Hassle Factors	Use Reminders
1. RECEIVES THE LETTER, BUT FAILS TO OPEN IT; OR OPENS THE LETTER, BUT DOES NOT READ IT.							
Affective response		✓					
Deliberation costs	✓		✓				
Ostrich effect	✓	✓					
2. READS THE LETTER, BUT DOES NOT UNDERSTAND IT.							
Cognitive load				✓	✓		
Deliberation costs	✓		✓				
3. DECIDES NOT TO ACT ON THE LETTER.							
Deliberation costs	✓		✓				
Identity		✓					
Psychological distance				✓			
4. DECIDES TO ACT, BUT FAILS TO REQUEST APPOINTMENT.							
Hassle factors						✓	
Limited cognition	✓				✓		
Present bias				✓			
Prospective memory failure							✓
5. MAKES AN APPOINTMENT BUT DOES NOT SHOW UP.							
Hot-cold empathy gap							✓
6. ATTENDS APPOINTMENT BUT DOES NOT SUBMIT APPLICATION.							
Hassle factors						✓	

NOTES: As discussed in Chapter 2, behavioral concepts cannot be definitively identified, but rather are hypotheses derived from the behavioral diagnosis and design process that may explain behavioral bottlenecks. This table is based on the framework described in Chapter 2 and depicted in Table 2.1.

[a] Following are examples of proposed intervention components in the Texas study:
   Harness Mere Exposure Effect: Send a teaser postcard before application is mailed to the noncustodial parent.
   Change Identity Priming Elements: Prime the parent identity, not the prisoner identity; do not mention custodial parent in correspondence.
   Use Social Influence: Emphasize peers' success in obtaining modifications.
   Reframe: Highlight loss of money by failing to apply for a modification; be concrete about the monetary benefit of receiving a modification.
   Reduce Cognitive Load: Simplify the letter by reducing the reading level; include a checklist.
   Remove Hassle Factors: Prepopulate the application with available information.
   Use Reminders: Send a follow-up postcard after the application is mailed to NCP.

standard materials (the control group) or revised BIAS pilot materials (the treatment or program group, referred to here as the BIAS group).
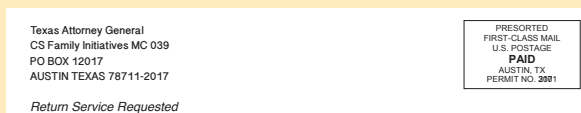
A Teaser Postcard

One week before the letter and application were sent, a postcard was sent to the BIAS group members explaining that they would be receiving important information on lowering their child support payments. It instructed them to "look out for our blue envelope in the mail." The purpose of this "teaser postcard" was to reduce the number of recipients who would disregard the letter they were to receive one week later. The teaser postcard, it was hypothesized, could influence the decision by increasing the recipients' exposure to the offer before receiving the letter, which may make them more receptive to reading the letter when it arrives (the mere-exposure effect). The postcard might also reduce deliberation costs upon receipt of the letter, since the recipient has been briefly introduced to the modification process. Figure 3.2 provides an example of a teaser postcard sent to incarcerated parents.

Application Packet

The standard OAG packet, which was sent to the control group, consists of a letter explaining the modification process and the application. To make the packet stand out from other pieces of mail, the envelope, letter, and accompanying materials were printed on blue-colored paper for the BIAS group. Keeping in mind people's limited cognition, making the packet eye-catching may increase the number of recipients who pay attention to and decide to read the materials.

FIGURE 3.2

TEASER POSTCARD TO BIAS PROGRAM GROUP

TEXAS OFFICE OF THE ATTORNEY GENERAL — CHILD SUPPORT DIVISION

TEASER POSTCARD, FRONT

Texas Attorney General
CS Family Initiatives MC 039
PO BOX 12017
AUSTIN TEXAS 78711-2017

Return Service Requested

PRESORTED
FIRST-CLASS MAIL
U.S. POSTAGE
PAID
AUSTIN, TX
PERMIT NO. 2001

TEASER POSTCARD, BACK

You Could Lower Your Child Support Payments!

We will send you important information soon on how you could lower your child support payments if your income has gone down due to incarceration.

For example, a parent with a monthly order of $300 could reduce the amount of child support owed by $3,600 in just one year.

In a few weeks we will send you everything you need to complete and submit an application.

Other parents have had courts lower their child support by $200 to $500 per month.

Completing the application is easy. You can do it during a brief meeting with the law librarian.

Once the recipient opened the envelope, the BIAS group's materials differed in several ways from the control group's materials:

- **Simplified reading level.** The standard letter used by the Texas OAG scored a 10.6 grade level using the Flesch-Kincaid Grade Level formula, which could present a barrier to inmates with low literacy levels.[16] The BIAS group's letter was simplified to a 7.6 grade level. The letter presented four simple steps to apply for a modification in a clear, graphical format. This more readable letter may help NCPs understand how modification can assist them, and can reduce the cognitive load associated with completing the application.

- **Use of social influence.** People have a tendency to be influenced by similarly situated peers when making decisions. Other people's skepticism or indifference can lead to inaction by those who are part of the same network. Rather than trying to counteract the influence of group norms, the BIAS letter leveraged it by saying that "other parents" have had their child support payment amounts reduced to as low as zero. This was intended to increase the NCP's confidence that a modification was within reach, and is an example of **re-biasing** — using a psychological influence that might otherwise prevent participation with the program to encourage it instead.

- **Removing the reference to the custodial parent.** The standard OAG letter emphasizes that the office will first contact the custodial parent upon receiving the NCP's application. In contrast, the BIAS group's letter omitted this reference. NCPs who have a difficult relationship with the custodial parent may have a negative affective response — or emotional reaction — to that reference, lessening the probability that they will act on the letter.[17]

- **Inclusion of a checklist to support plan-making.** Finally, the BIAS group letter included a simplified checklist for the four steps that must be taken to apply for a child support order modification, to illustrate that the process is not burdensome. This checklist was designed to help the recipient overcome the hassle factors associated with applying for a modification by illustrating that those obstacles might not be as great as perceived. The checklist included a place to write down the appointment with the law librarian as an **implementation intentions** prompt — a strategy that uses a specific event to trigger the activation of a plan by an individual.[18] Finally, based on the observation that notarization may be a significant bottleneck in the modification application process, the checklist included several reminders to ensure that the law librarian notarized the affidavit.

In addition to changes made to the letter, the following modifications were made to the application that the BIAS group received:

- As discussed, incarcerated NCPs must complete an application with information on their background and current circumstances to be considered for a downward modification of their child support orders. Applications are often returned to the OAG with incomplete information. This may be in part because hassle factors prevent NCPs from filling out the applications in their entirety. To make the affidavit easier to complete, child support staff pre-populated the application with information that the OAG already possessed, including the child support order number, monthly order amount, and number of children on the order.

- The standard OAG forms, which were used for the control group, were mailed in one envelope but as two separate documents: (1) the Request to Modify or Lower Child Support letter, and (2) the Affidavit Form. Both forms need to be completed and mailed to the OAG, but it may not be clear

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16 The Flesch-Kincaid readability formula "translates" the level of reading comprehension difficulty for a passage in English to an equivalent U.S. grade level. For example, a reading passage with a Flesch-Kincaid score of 10.0 is written at a tenth-grade level.

17 While the OAG will still follow the standard procedure of contacting the custodial parent if a modification request is received, this information does not need to be highlighted in the letter.

18 Milkman et al. (2011).

FOLLOW-UP POSTCARD, FRONT

Texas Attorney General
CS Family Initiatives MC 039
PO BOX 12017
AUSTIN TEXAS 78711-2017

Return Service Requested

PRESORTED
FIRST-CLASS MAIL
U.S. POSTAGE
PAID
AUSTIN, TX
PERMIT NO. 310

FOLLOW-UP POSTCARD, BACK

You Could Lower Your Child Support Payments!

Your child support debt gets bigger every month you don't take action!

A PARENT WITH AN ORDER OF $350 PER MONTH COULD REDUCE HIS OR HER CHILD SUPPORT DEBT BY $4,200 IN ONE YEAR. MANY OTHER PARENTS IN TDCJ HAVE ALREADY HAD THEIR CHILD SUPPORT REDUCED.

A few weeks ago, we sent you a letter letting you know that you might be eligible to have your child support payments lowered if your income has gone down due to incarceration. We haven't received your application, but you still have time to send it to us.

Make an appointment with the law librarian today, and complete the blue application we sent you. As soon as we receive your completed application, we'll start reviewing your case to see if your support can be lowered.

Act now! You could lower your child support payments!

to the recipient what needs to be completed and what does not. The letter refers to the Affidavit Form as the "application," but it is not labeled as such. To address possible confusion, the OAG sent the two documents stapled as one packet to the BIAS group, with a cover letter clearly describing the contents of the packet. In addition, the team suggested some formatting changes to increase clarity in the application. These formatting changes were intended to address the problem of limited cognition.

A Reminder Postcard to Incarcerated Noncustodial Parents

If noncustodial parents in the BIAS group did not return an application to the Texas OAG within one month, they were sent a follow-up postcard with a reminder to submit the application. This served as a nudge for those who had been meaning to request a modification but had not yet done so, forgot to do so, or lost the original letter. In addition, it was **framed** to encourage those NCPs who had decided not to fill out an application to reconsider their decision. The postcard suggested that potential applicants "make an appointment with [their] law librarian today." Figure 3.3 provides an example of a follow-up postcard to send to NCPs.

Next Steps

The intervention proposed by the BIAS team aimed to increase the number of complete applications that are *submitted* for modification. There are several additional steps to actually *receiving* a modification, which involve review by the child support field office and a court hearing. Since these latter parts of the process are outside the OAG's control, the intervention will not address bottlenecks that may take place at the field offices and courts.

In this test, several behavioral concepts are being evaluated as one bundled intervention. Though it will not be possible to tease apart whether, for example, eliminating hassle factors or simplifying the reading level is having a greater impact, the intervention will inform the field on whether the bundle of behaviorally informed interventions influences the rate of return of modification applications.

Implementation Considerations When Designing a Behavioral Intervention

When creating an intervention for a government program, designers must keep in mind that practices and decision-making authority vary across jurisdictional lines. This variation must be understood before an intervention can be implemented statewide.[19] In this case, field offices have to agree that working on the order modification requests of incarcerated noncustodial parents is an important priority. The power to grant order modifications ultimately lies with the courts. Because some judges are more amenable to these requests than others, the Texas initiative is targeted to courts where the application may be approved.[20] The OAG had to get the message out to the field offices about the program, how it works, and why it is in the interest of each office to process these applications. The OAG also had to train law librarians on their role in the process, and how they can support inmates who approach them with questions.

Staff capacity is another issue that is often raised when considering the type of intervention to design and implement. Before the BIAS pilot was designed, the OAG sent only one piece of mail to NCPs informing them of the opportunity to apply for a modification to their child support order. Since the intervention design called for multiple mailings, the OAG had to determine a schedule for checking addresses and mailing letters that was realistic. It may not make sense to launch an intervention under BIAS that cannot be sustained by an agency over the long term. Those who consider launching a behavioral test should think beyond the period of experimentation to the types of changes that would be realistic for staff to implement on an ongoing basis.

Key Insights

The BIAS team's work in Texas is an example of how the simple calculation of the target population's self-interest does not always predict what they will do. When noncustodial parents do not apply for a modification, it is not always clear to program operators why they are not taking advantage of the offered benefit. In the case of an incarcerated population, the potential to intervene in their environment is limited by security concerns and the procedures set in place by the correctional system. As a result, it takes extra effort by program operators to overcome the psychological and behavioral barriers to engagement, and to find ways of communicating with and encouraging the target group to follow through on the application. While submitting an application is no guarantee that incarcerated noncustodial parents will get a downward modification of their order, it is the only way they have a chance to succeed.

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19   On a broader level, state policies also vary. For example, as discussed earlier, states have different guidelines about order modifications for incarcerated NCPs.

20   See the Office of Child Support Enforcement (2012b) fact sheet for more information on child support state policies.

Increasing Client Engagement with Job Search: Asian Human Services in Illinois

One of the primary goals of Temporary Assistance for Needy Families (TANF) is to increase participants' self-sufficiency through work, and receipt of benefits is often contingent on job-related activities. Job search assistance is a key component that TANF offices use to reach this goal. This chapter reviews the application of the behavioral diagnosis and design framework to the job search program provided by Asian Human Services (AHS),[1] a social service agency in Chicago that holds a contract with the Illinois Department of Human Services (DHS) to provide employment-related services for Illinois's Work First program (described later). The chapter provides an overview of the policy relevance of job search assistance, describes the behavioral diagnosis work conducted, and concludes with a few key insights that have broader applicability to other job search programs. Throughout the chapter, terms from behavioral science appear in bold when they are first mentioned. These terms are explained in greater detail in the Appendix.

Policy Relevance of Job Search Assistance for TANF Recipients

Job search of some type is nearly always needed to secure a job and, therefore, is an important precursor to employment.[2] As a result, most states fund job search programs for participants in safety net programs such as TANF. These job search programs — which tend to be short term, relatively low intensity, and low cost — are designed to help increase participants' work-readiness, the number of job applications they submit, job offers received and accepted, or, in cases where participants cannot find employment in the regular labor market or have more significant barriers to overcome, engagement in subsidized employment.[3] All of these activities may increase the likelihood of employment, which in turn may increase hourly wages and earnings. In addition to providing job search programs, states sanction participants by reducing their benefits if they fail to participate in the required work activity.[4]

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1   Chapter 2 of this report discusses the framework. In summary, behavioral diagnosis and design is a process for systematically developing behavioral interventions. It consists of four phases: defining the problem to be addressed, diagnosing all potential behavioral bottlenecks, designing behaviorally informed interventions to address the identified bottlenecks, and testing whether the interventions work using random assignment.

2   This section is based on Klerman, Koralek, Miller, and Wen (2012).

3   Subsidized employment provides income support to disadvantaged groups and is intended to improve their employability by placing them in a temporary work activity until they can find a regular, unsubsidized job.

4   In 2011, 16 states withheld the entire family benefit for the first sanction and 45 states either withheld the entire family benefit or closed the entire case in the most severe sanctioning situations (Kassabian, Whitesell, and Huber, 2012, p. 118).

Despite both the "carrots" and the "sticks" that provide incentives to participate and disincentives for not participating, engagement in job search programs is often quite low. Yet job loss among low-skilled, low-wage workers is high — leading to economic instability among low-income families, particularly those attached to the TANF system.[5] When TANF recipients do not satisfy their job search requirements, states risk missing annual work participation rate targets mandated by the federal government under the TANF block grant.[6]

Through mutual agreement with AHS and Illinois DHS, the Behavioral Interventions to Advance Self-Sufficiency (BIAS) team focused on increasing client engagement with job search because it offered an opportunity to consider psychological issues such as client perceptions and attitudes (rather than issues related to financial costs and benefits), and how these issues could be addressed through behaviorally informed changes. The BIAS team hypothesized that increasing client engagement with job search could lead to outcomes among clients such as becoming job-ready more quickly, attending a higher percentage of mandatory job search sessions, applying to more full-time jobs, and, ultimately, finding unsubsidized employment at a higher rate than would be possible otherwise.

Behavioral Diagnosis and Design

The AHS Work First program promotes employment-related outcomes through an individualized approach of one-on-one case management and independent job-search activities. Figure 4.1 shows this process in a simplified form.[7] The process begins when a client meets with a DHS caseworker, develops a service plan, and is assigned to AHS or another independent training and job search assistance provider. The client receives a child care subsidy immediately (if needed and available) to make child care arrangements before the intake appointment. Intake at AHS begins with an orientation session for new participants every Wednesday. During the one- to two-hour group orientation, clients are given a packet of forms to complete on site. Clients are also assigned to one of two case managers and instructed to return the following Monday for an initial meeting with their case manager and an assessment of their job-readiness.

The following Monday, clients who meet certain criteria (such as having a complete résumé) are deemed job-ready and immediately begin their search for full-time employment. This consists of applying for jobs found through online search engines, classified ads, and postings that are e-mailed by AHS's job developer. Clients who are designated as "not job-ready" are responsible for *becoming* job-ready, which may include completing tasks such as preparing or updating résumés or securing transportation and child care.

These activities — both job search and job-readiness preparation — are conducted at AHS. Clients meet with their case manager once a week for the first month and once a month thereafter. They persist in job search until one of several outcomes occurs: they are placed in a subsidized work experience, they find an unsubsidized job, they are terminated for noncompliance, or the contractor requests reassignment to a different service provider because they have missed meetings or failed to achieve their mandatory hours of job search.

Hypothesized Bottlenecks and Behavioral Concepts

The review of program procedures and materials, as well as discussions with program administrators and clients, yielded one bottleneck outside of the realm of AHS, and three behavioral bottlenecks that apply to AHS's services and staff.
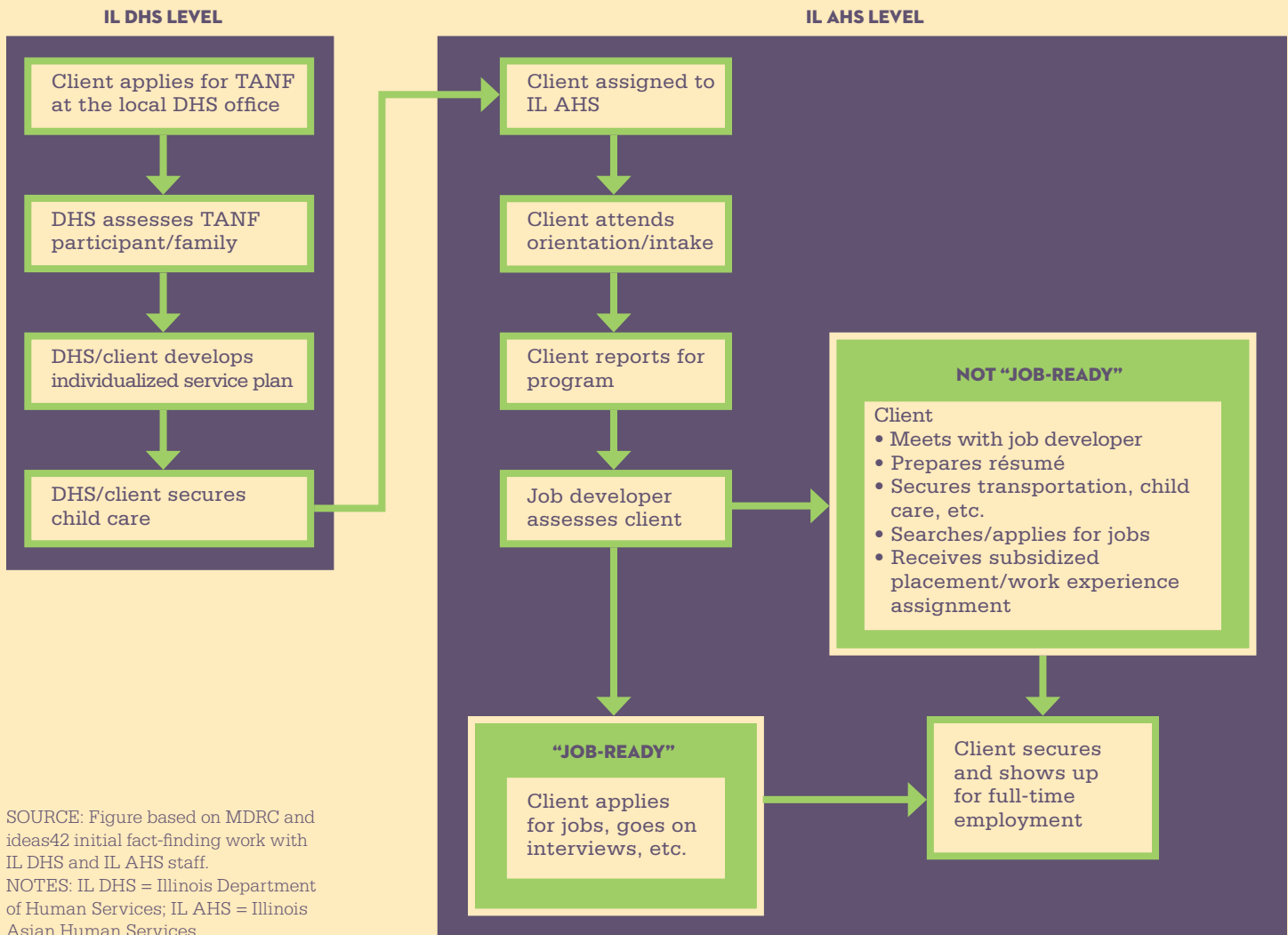
The bottleneck outside of AHS involved securing child care. During the team's site visit, many of the observed clients did not have a secure child care placement. DHS caseworkers inform clients when they need to obtain child care, but this process is largely the responsibility of the clients, with little assistance provided by DHS or AHS staff. The absence of a stable, secure child care arrangement could certainly interfere with participant engagement with the program and willingness to find full-time work, but

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5   Hamilton et al. (2001); Michalopoulos and Schwartz (2000); Navarro, Azurdia, and Hamilton (2008).
6   As of 2011, 50 percent of a state's single-parent caseload was required to participate an average of 30 hours a week. Two-parent families were required to participate at a rate of 90 percent for an average of 35 hours a week (Kassabian, Whitesell, and Huber, 2012, p. 97).
7   Figure 4.1 is a "process" map and not a "behavioral" map because particular behavioral concepts are not attached to the process.

FIGURE 4.1

PROCESS MAP OF WORK FIRST REFERRAL AND PROGRAM EXPERIENCE

ILLINOIS ASIAN HUMAN SERVICES

IL DHS LEVEL

IL AHS LEVEL

Client applies for TANF at the local DHS office

↓

DHS assesses TANF participant/family

↓

DHS/client develops individualized service plan

↓

DHS/client secures child care

Client assigned to IL AHS

↓

Client attends orientation/intake

↓

Client reports for program

↓

Job developer assesses client

NOT "JOB-READY"

Client
- Meets with job developer
- Prepares résumé
- Secures transportation, child care, etc.
- Searches/applies for jobs
- Receives subsidized placement/work experience assignment

"JOB-READY"

Client applies for jobs, goes on interviews, etc.

Client secures and shows up for full-time employment

SOURCE: Figure based on MDRC and ideas42 initial fact-finding work with IL DHS and IL AHS staff.
NOTES: IL DHS = Illinois Department of Human Services; IL AHS = Illinois Asian Human Services.

since child care referrals were considered to be outside the scope of the work with AHS (as the issue was the responsibility of the DHS caseworker), it was not considered a bottleneck that the BIAS team could address.

The three hypothesized behavioral bottlenecks within the realm of AHS that the team considered are explained below and shown in Table 4.1.

▶ **Bottleneck 1: Clients may think of AHS and the welfare system on the whole as punitive and uncaring.** Clients may enter AHS with negative beliefs and feelings about welfare agencies. If true, this perception could color their interpretation of the interactions they have with AHS staff because of **confirmation bias**, or people's tendency to understand or perceive information in a way that confirms their own preconceived beliefs. Client perception is further shaped by **framing** — whereby subtle aspects of the way information is presented can have an outsized influence on perception and behavior. Here, the concern is whether messages to clients contain positive or negative framing cues. Compare these two messages:

(1) You must meet your hours or you will face termination from the program.

(2) It is important that you meet your hours so you can work toward your goal of finding full-time employment.

TABLE 4.1

HYPOTHESIZED RELATIONSHIPS OF BOTTLENECKS, BEHAVIORAL CONCEPTS, AND COMPONENTS OF THE INTERVENTION

ILLINOIS ASIAN HUMAN SERVICES

HYPOTHESIZED BOTTLENECK AND POSSIBLE BEHAVIORAL CONCEPTS	PROPOSED INTERVENTION COMPONENT[a]		
	Change Identity Priming Elements	Simplify and Modify Program Processes	Use Reminders
1. CLIENTS MAY THINK OF AHS AND THE WELFARE SYSTEM GENERALLY AS PUNITIVE AND UNCARING.			
Confirmation bias	✔	✔	
Framing		✔	
2. CLIENTS MAY SEE JOB SEARCH AS A PASSIVE ACTIVITY AND NOT EXPECT A SUCCESSFUL OUTCOME.			
Anchoring		✔	
Confirmation bias	✔		
3. CLIENTS MAY NOT HAVE THE PSYCHOLOGICAL RESOURCES TO FULLY ENGAGE WITH THE INFORMATION PRESENTED DURING THE ORIENTATION.			
Limited cognition		✔	✔

NOTES: As discussed in Chapter 2, behavioral concepts cannot be definitively identified, but rather are hypotheses derived from the behavioral diagnosis and design process that may explain behavioral bottlenecks. This table is based on the framework described in Chapter 2 and depicted in Table 2.1.

[a] Following are examples of proposed intervention components that could be implemented in Illinois:
   Change Identity Priming Elements: Alter orientation approach to emphasize clients' strengths; emphasize clients' goals to obtain full-time employment as a positive aspiration.
   Simplify and Modify Program Processes: Reduce unnecessary paperwork and identify which information in the orientation is the most important, or which to focus on first.
   Use Reminders: Distribute reminders for upcoming events, such as scheduling appointments.

While the information regarding program termination is important and must be communicated to clients, if the former type of message is dominant, clients are more likely to have negative feelings about their job search.

Alternatively, the first statement may invoke **loss aversion**, a phenomenon in which people tend to react more strongly to a perceived loss than to an equivalent gain.[8] Research has shown that even if the eventual outcome is the same in both cases, framing a change as a loss rather than as a gain makes the option about twice as potent.[9] If the consequence was presented as a loss of valued program services (such as, "If you do not meet your hours, you may miss out on opportunities available as part of the Work First program"), the message might be even more effective.

Bottleneck 2: Clients may see job search as a passive activity and not expect a successful outcome.
Clients must understand that job search is an active, purposeful process that involves developing application materials, seeking out job opportunities, submitting applications, and following up with employers. Clients need this view of the process immediately because **anchoring** effects cause people

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8   Kahneman, Knetsch, and Thaler (1990).
9   Kahneman, Knetsch, and Thaler (1990).

to become attached to the first information they receive, and confirmation bias leads people to differentially notice information that confirms their first impression. As already noted, clients begin AHS's Work First program by attending an orientation on Wednesday, but they do not begin program activities until the following Monday. A four-day break after orientation is likely to anchor clients to passivity in their impression of Work First participation.

Only clients who have "been unsuccessful in other employment and training programs" are eligible for Work First.[10] If clients see AHS as an extension of previous programs, they may anchor on those experiences and expect to fail again. Finally, based on their previous lack of success, clients may decide that self-directed job search requires a lot of effort on their part but offers no reasonable chance of leading to a good job, and they will maintain that impression if staff do not persuade them otherwise.

▶ **Bottleneck 3: Clients may not have the psychic resources to fully engage with the information that is presented during the orientation.** Behavioral science has shown that all human beings have **limited cognition** — a bounded capacity to process, understand, and recall information. Research into the **psychology of scarcity** shows that the pressure of negotiating life under conditions of poverty places a particularly high toll on cognitive resources, as people often need to make many trade-offs to manage their lives with limited financial resources.[11] These effects are likely to be especially acute during program orientation, but can affect other aspects of AHS's program.

Clients with limited cognition may not understand which information in the orientation is the most important, or even which to focus on first. The bottleneck may be that clients use their attention resources in a way that is less than optimal and may miss important information during this session. If information is conveyed in complex ways, people need time and further attention to understand it, and clients' limited understanding of rules or procedures may contribute to their failure to engage in job search. Even if clients pay attention to all the right information and understand it, they may not be able to remember all of it, or may fail to recall it at the time when it is necessary, a problem called **prospective memory** failure. For instance, a client may not remember to schedule an appointment to get a bus pass. If clients do not remember important information altogether, or do not remember the information when it is useful, they are less likely to succeed in job search.

Implications for Intervention Design

A number of behavioral interventions might address the hypothesized psychological bottlenecks that keep people from participating in an AHS program. The intervention ideas discussed with AHS fell into two categories: (1) operational modifications related to forms that need to be completed and submitted, the content of meetings, and the timing or ordering of tasks, and (2) staff training to insert a different tenor and set of messages into interactions with clients. Because the operational changes are the closest to **nudges** (relatively quick, easy, and low-cost, behaviorally informed changes),[12] this section presents a discussion of two of them: (1) priming successful identity, and (2) overcoming cognitive scarcity and limited cognition with the use of agendas and reminder handouts.

Priming Successful Identity

Every person has a number of overlapping and conflicting identities. The way people feel and act depends on which identity is active — and any given situation has a strong influence on the identity that manifests itself.[13] Staff can encourage desired behavioral outcomes by drawing on **identity priming**, which occurs when one identity in particular is made salient in order to influence an individual's response to a stimulus.

Research shows that asking clients to think and talk about a time in their lives when they succeeded can activate identities that inspire and motivate them to take action toward their goals.[14] In this way, altering

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10 See the Illinois Department of Human Services Temporary Assistance for Needy Families (TANF) Work First Web site (www.dhs.state.il.us/page.aspx?item=31775).
11 Mullainathan (2005, 2011); Shah, Mullainathan, and Shafir (2012); Shafir and Mullainathan (2012).
12 Thaler and Sunstein (2008).
13 Ross and Nisbett (1991).
14 Hall (2008), Part 3.

the orientation procedures and other key components of the program to underscore a client's strengths could, in turn, have a positive effect on program engagement. For instance, before clients sit down for a job search session, staff could present them with the following quick exercise:

> Think about something you did this week that made you feel successful. Write down what happened and how you felt afterwards.

This type of confidence priming can be powerful, but the effect is relatively short-lived. It would be wise to incorporate it at a point in the process when an immediate and important action follows, or to do it on an ongoing and regular basis during the program. This same insight can be applied to the design of written materials and forms to make them more positive in frame, and avoid activating client identities related to dependency or inadequacy.

Using Agendas and Reminder Handouts

An important strategy for overcoming a person's limited cognition is to simplify processes, incorporate agendas that provide a roadmap to upcoming events, specify next steps in clear and attainable goal statements, and use **reminders**. These devices serve to direct attention to the information and action steps that are most important, and are relatively easy to incorporate into the orientation and client meetings with caseworkers.

For example, during the orientation, staff could hand out and refer to a meeting agenda, which lists the topics of discussion. Clients might receive one folder labeled "Forms to Fill Out During Orientation" and another labeled "Program Information for Later Use." Then orientation staff could ask clients to take out the first folder, so each client has the same forms in the same order. Clients may find it easier to focus on one document at a time and devote their full attention to that, rather than being asked to make sense of a large packet. This might also help clients keep track of handouts later if they forget information. Clients may not notice when deadlines and responsibilities are announced verbally, or may not remember them even if they do notice, so written handouts summarizing this information might be helpful as well.[15]

Key Insights

One overall insight from this work is the power of human beings' natural tendency to think of behavior as driven in a consistent way by their character, rather than by the situation.[16] This tendency, called the "fundamental attribution error," is pervasive despite research in social psychology that convincingly shows that this interpretation of behavior is incorrect. In fact, studies have shown that features of a given situation determine as much as 70 percent of behavior.[17] Awareness of the fundamental attribution error is useful for practitioners, as they have a great deal of influence through their ability to change the situation or the environment in small ways that could have meaningful effects on participant behavior. For example, starting job search activities immediately, establishing goals during the first session, and emphasizing positive identities in materials and verbal communication may all matter in ways that are currently overlooked.

The work with AHS and Illinois DHS also demonstrates how complex behavioral interventions can be for job search programs. Many factors can contribute to participants' lack of engagement. For example, jobs can end unexpectedly and the time frame to receive public assistance can be long. Therefore, parents may be worried about having unstable resources. Or parents may simply be concerned about taking a job too soon at a wage that is too low. Nonetheless, a behavioral approach may have the potential to improve outcomes and complement traditional approaches geared to induce bigger changes in client outcomes.

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15 While the intervention ideas could help improve program engagement, the BIAS project will not be able to evaluate whether they work at AHS because of limited sample size for a study and difficulty in acquiring the needed data. Since job search assistance is decentralized in Illinois (as in many states), contractors such as AHS serve a relatively small proportion of the county caseload. In addition, since each contractor operates its Work First program differently and collects different outcome measures (and data sets are not integrated within providers or between providers and DHS), it would be difficult to evaluate the implementation of these ideas at low cost. In general, availability of administrative data on the measures of primary interest is very important in this work, as such data minimize evaluation costs. (See Chapter 2 for the discussion of gathering data.) While the BIAS team was not able to continue a pilot with AHS, the lessons learned from this process can be applied to TANF programs in other states, and can inform other employment programs.

16 In fact, the word "character" comes from a Greek word meaning "an engraved mark: something permanent."

17 Ross and Nisbett (1991).

Increasing Willingness to Wait: The National Domestic Violence Hotline

Domestic violence is a major public health and social policy issue. The National Domestic Violence Hotline (NDVH) addresses the problem of domestic violence by providing crisis intervention, information, and referrals via its 24-hour telephone hotline. This chapter presents a case study of applying the behavioral diagnosis and design process to understand how insights from behavioral economics can be used to minimize the number of callers to NDVH who hang up before reaching an advocate (an NDVH staffer).[1] The chapter begins with a brief overview of domestic violence and NDVH, explains the behavioral diagnosis and design process in detail, and describes the hypothesized behavioral bottlenecks that are likely to contribute to high call-abandonment rates. The chapter then provides intervention design implications and concludes with key insights from the work thus far. Throughout the chapter, terms from behavioral science appear in bold when they are first mentioned. These terms are explained in greater detail in the Appendix.

Policy Relevance of Domestic Violence Crisis Intervention and Prevention

The statistics on domestic violence are alarming: 25 percent of women and 7 percent of men are victims of domestic violence at some point in their lives.[2] Approximately 22 million women in the United States have been raped (about 18 percent of the population), half by an intimate partner.[3] Intimate partner violence accounts for about one-third of murders of women.[4] A survey of domestic violence services and shelters conducted on September 12, 2012, shows that over 64,300 victims were served in just one 24-hour period, and 75 percent of domestic violence programs provided residential services.[5]

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1   Chapter 2 of this report discusses the framework. In summary, behavioral diagnosis and design is a process for systematically developing behavioral interventions. It consists of four phases: defining the problem to be addressed, diagnosing all potential behavioral bottlenecks, designing behaviorally informed interventions to address the identified bottlenecks, and testing whether the interventions work using random assignment.
2   National Coalition Against Domestic Violence (2007a, 2007b). In this chapter, the terms "domestic violence" and "intimate partner violence" are used interchangeably. For more information on definitions, see Centers for Disease Control and Prevention (2013).
3   See Black et al. (2011), Tables 2.1 and 4.1, for the statistics on rape and intimate partner involvement, respectively.
4   Rennison (2003).
5   National Network to End Domestic Violence (2013).

The National Domestic Violence Hotline, a nonprofit organization established in 1996 to provide 24-hour support to individuals affected by domestic violence, receives partial funding from the Administration for Children and Families. NDVH provides back-up support for several state hotlines and sole services for entire states that do not have the resources to operate their own hotlines. In the year ending August 31, 2012, NDVH received 275,499 phone calls, an average of more than 750 each day. About 60 percent of hotline calls answered by advocates were seeking social services related to domestic violence, such as referrals to shelters and individual and group therapy. Slightly more than 25 percent of callers were seeking assistance with legal services such as protective or restraining orders, identification of attorneys who could take their cases, or assistance with child custody.[6]

Behavioral Diagnosis and Design

The process by which NDVH triages calls is depicted in Figure 5.1. An advocate can answer a call before four rings (that is, within 30 seconds). If an advocate does not answer the call before the end of the fourth ring, a prerecorded message is activated telling callers that they have reached the hotline and that advocates are busy handling other calls. The prerecorded message replays every 35 seconds and the caller hears silence between messages. See Figure 5.2 for a depiction of the message sequence and NDVH's standard message language.

The primary objective of NDVH's work with the Behavioral Interventions to Advance Self-Sufficiency (BIAS) project is to reduce the call-abandonment rate, which is calculated as the number of calls that remain unanswered by an advocate for 30 seconds or longer divided by the number of all calls.

By NDVH's definition, a call is considered "abandoned" only if the caller hears the first prerecorded message, which is activated roughly 30 seconds after the call is initiated. Callers who disconnect the line after 30 seconds are presumed to be an important part of the target group that NDVH aims to serve, as such callers have likely not called the line in error and likely have some service need, given that they waited to speak to an advocate at least until the point of hearing the prerecorded message. Hotline staff view the failure to serve such callers as a lost opportunity to address an unmet need.[7]

Historically, the NDVH call-abandonment rate has been between 10 and 15 percent (calculated over a period of one year), though it is higher on some days and at some times of the day. It is hard to say how this finding compares with other incoming call centers for two reasons. First, NDVH is unique in that it is the only national domestic violence call center, and other domestic violence call centers do not collect detailed information on call volume in a similar manner.[8] Second, many other call centers use a measurement called "service level," defined as "answering X percent of calls within the first Y seconds." NDVH does not currently employ a metric comparable to service level.

Hypothesized Bottlenecks and Behavioral Concepts

The BIAS team considered multiple possibilities for applying a behavioral intervention at NDVH — for example, one that involves the level of service that staffers provide once calls are answered. Ultimately, the team decided to focus on the experience of callers who are put on hold, as this is a common occurrence, especially during periods of high call volume. The experience of waiting on hold has important implications for whether or not NDVH callers receive help. Many callers hang up while on hold, and once lost, they may never call back and receive the assistance they need.
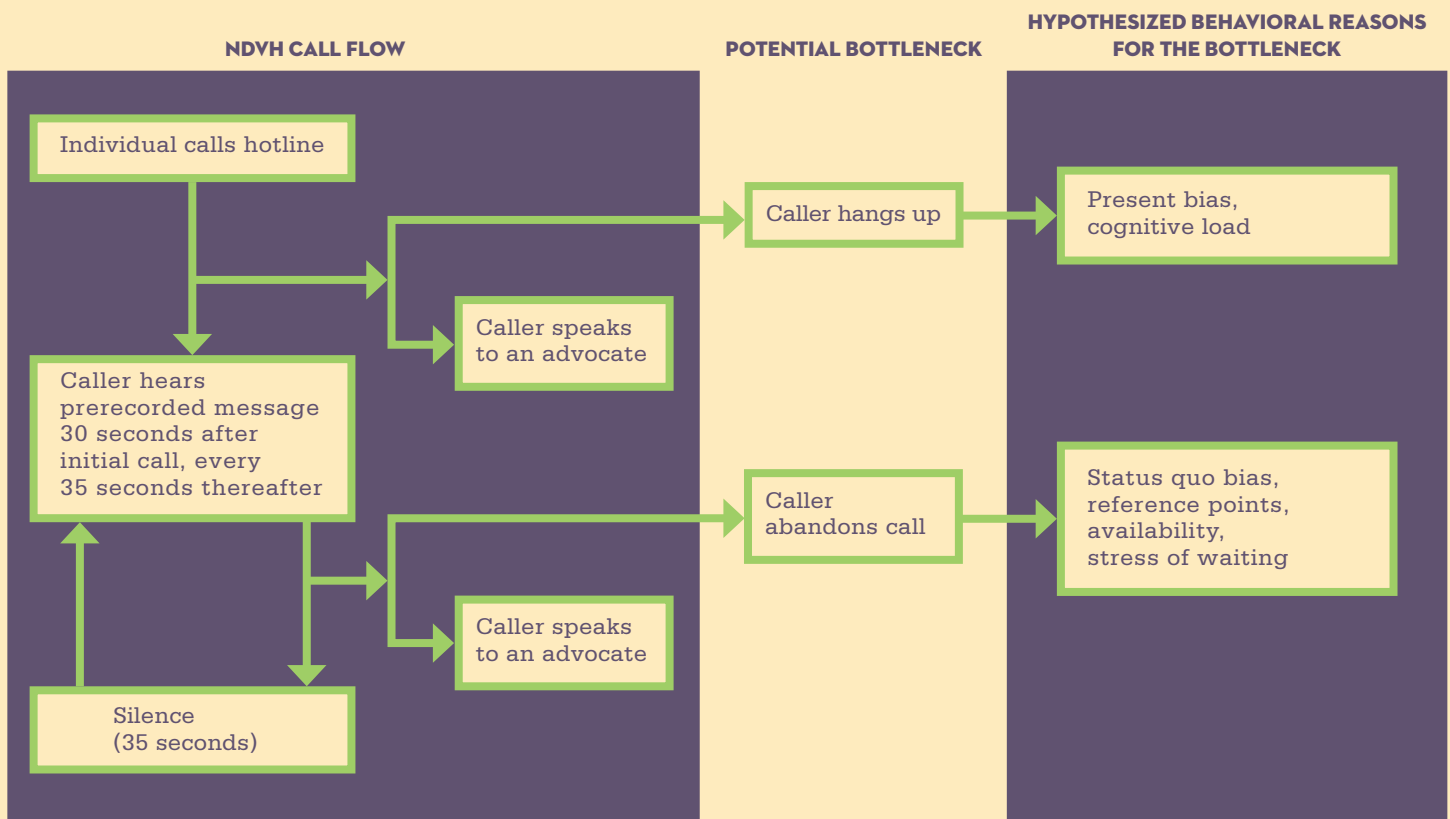
During the behavioral diagnosis and design process, one major structural impediment and three potential behavioral bottlenecks were identified in NDVH's call center. The structural impediment is the current level of staffing. Increasing the number of NDVH staff who are available to answer calls would likely decrease the abandonment rate, but this approach requires additional resources (which are not currently available),

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6   Internal data received by NDVH. While the majority of callers were current or past victims of domestic violence, friends, family members, and others also placed some calls.

7   However, some calls that might qualify as "abandoned" according to NDVH's definition may in fact represent calls from individuals whose needs are being met. For example, some so-called abandoned calls could be from individuals in real emergencies or life-threatening situations who hang up to call 911 once they hear the hold message (in which case NDVH is meeting the caller's need). Other callers may call back later and reach an advocate (even within the same hour or day). The available data cannot distinguish among these alternatives.

8   Personal communication, Director of Operations, NDVH.

FIGURE 5.1
BEHAVIORAL MAP OF CALL FLOW
NATIONAL DOMESTIC VIOLENCE HOTLINE

NDVH CALL FLOW

Individual calls hotline

Caller hears prerecorded message 30 seconds after initial call, every 35 seconds thereafter

Caller speaks to an advocate

Caller speaks to an advocate

Silence (35 seconds)

POTENTIAL BOTTLENECK

Caller hangs up

Caller abandons call

HYPOTHESIZED BEHAVIORAL REASONS FOR THE BOTTLENECK

Present bias, cognitive load

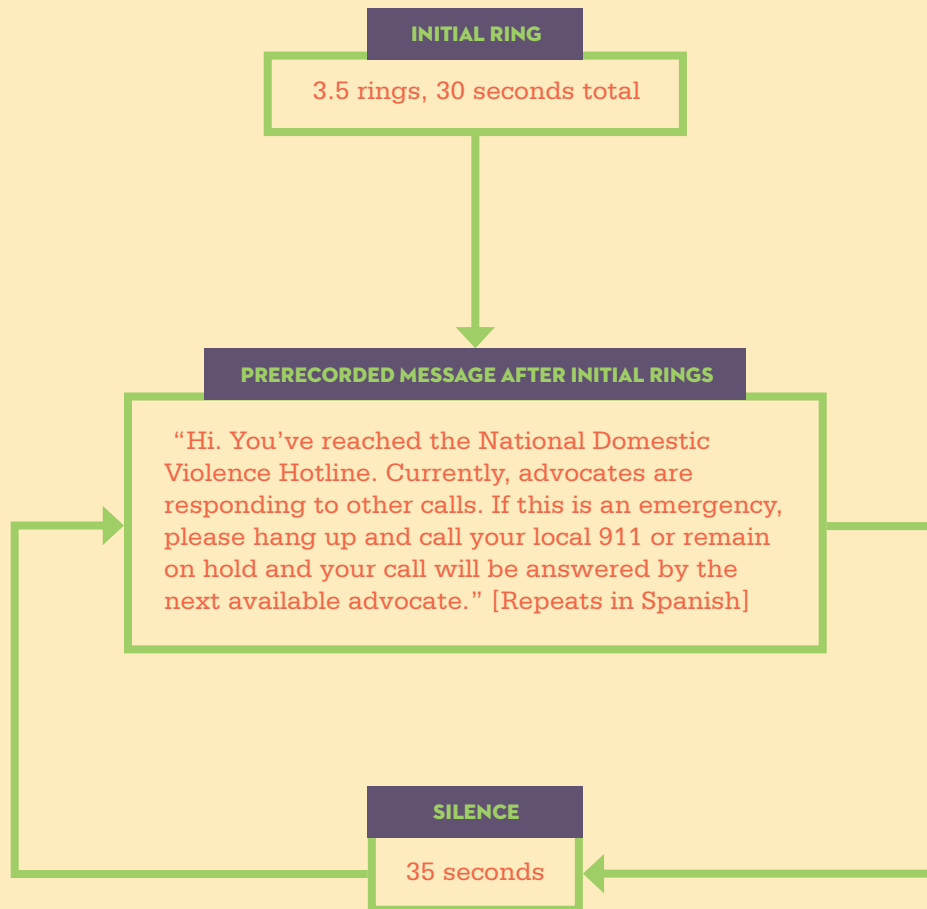Status quo bias, reference points, availability, stress of waiting

SOURCE: Figure based on MDRC and ideas42 discussions with NDVH staff.
NOTES: The Mitel system that NDVH uses divides unanswered calls into two categories — abandoned calls and hang-ups — both of which appear under "Potential Bottleneck." Abandoned calls are any unanswered calls that lasts 30 seconds or more, which is the time it takes to get to the first prerecorded message. Hang-ups reflect unanswered calls of less than 30 seconds, which means that the client hung up before hearing the message.

whereas the BIAS project aims to make low-cost, behaviorally informed changes. While decreasing the amount of time that staff spend on the phone with each caller might be possible, this solution was judged to be incompatible with NDVH's mission to provide broadly defined assistance and guidance to callers. However, it may be possible to change staff allocation across time in a behaviorally informed way or to adjust the timing of incoming calls in a behaviorally informed way. For example, staff shifts could be adjusted to align with increases in call volume, with more staff coming in when call volume is expected to be high and fewer staff coming in when call volume is expected to be lower; or NDVH's wellness initiatives, which are scheduled programs and activities that are intended to help advocates handle the difficult nature of their jobs, could be augmented so that advocates require fewer, but more restful, breaks from the demands of taking highly emotional calls — for example, by providing a comfortable room where they could spend time after particularly difficult interactions.

The three hypothesized behavioral bottlenecks and their associated behavioral concepts are discussed in the following paragraphs.

FIGURE 5.2
CURRENT MESSAGE SEQUENCE HEARD BY CALLERS
NATIONAL DOMESTIC VIOLENCE HOTLINE

INITIAL RING

3.5 rings, 30 seconds total

PRERECORDED MESSAGE AFTER INITIAL RINGS

"Hi. You've reached the National Domestic Violence Hotline. Currently, advocates are responding to other calls. If this is an emergency, please hang up and call your local 911 or remain on hold and your call will be answered by the next available advocate." [Repeats in Spanish]

SILENCE

35 seconds

SOURCE: Author discussions with NDVH staff and direct observations from auditory recordings.

▶ **Bottleneck 1: Calling NDVH is likely to be stressful and emotionally painful because of the reason for the call, and waiting on the line in silence may cause callers to ruminate on fearful thoughts and the stress of waiting.** The stress and emotional pain associated with calling NDVH may trigger traumatic thoughts about the emotional and physical pain that the caller has experienced and the uncertainty of the future. Callers who are waiting on the line may start thinking about their situation, which may be so painful that they hang up even though they know they should wait.[9]

This moment of stress while waiting on the phone for an advocate to answer may lead to a psychological feedback loop — from the emotional distress, to the degree to which a caller focuses on these feelings, to the increasing willpower it takes to stay on hold, to the diminishing amount of attention a caller can apply to anything else, to even more emotional distress, and so on. **Present bias** (the tendency to focus on short-term preferences over long-term benefits) and **cognitive load** (when pressing concerns can weigh on someone's mind and actually reduce decision-making capacity in the moment) may exacerbate this pain. These concepts play a critical role here because of the way they interact with an individual's attention. An individual's present pain, therefore, tends to override the chance to reap a future benefit, even if that benefit means getting out of a dangerous or difficult situation like domestic violence. If an individual finds it very

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9   For a review of psychological factors that can prevent victims of domestic violence from seeking help, see Barnett (2001).

stressful to call NDVH and then wait on hold for someone to answer, that stress consumes enough attention to trigger a momentary overburdening of mental resources, which makes it even harder to focus on the long term and the reason for the call in the first place.

Bottleneck 2: Callers do not know how long they will be waiting, and the uncertainty may make them more likely to hang up. While on hold, callers are not told how long they will be waiting for an advocate. The outgoing message does not provide a **reference point** for expected wait time. Contextual reference points have large effects on perception.[10] Since an expectation of wait time is not provided, callers likely look to past experiences to set a reference point or subconsciously substitute an easier question — such as "Will I have to wait a long time?" — for the question, "How long should I expect to wait?" This easier question is a **heuristic**, which acts as a "rule of thumb" when making hard decisions.[11] In this case, the heuristic may simplify expectations to either "My call will be answered quickly" or "I will have to wait a long time." The effect of reference points may also be exacerbated by a **status quo bias** that leads people to believe that the future will be much like the present. The caller's expectations about the call being answered are colored by the experience of being on hold, which works along the following lines: "I am waiting on hold right now, so five seconds from now I am likely to still be on hold." This may be compounded by a lack of external cues that assist in setting expectations for how long the caller will be on hold or what causes the wait time. Indeed, status quo bias may be further intensified by the long period of time that callers are listening to silence.[12]

Bottleneck 3: Unexplained waits seem longer than explained waits. While callers may subconsciously understand that they are waiting because other callers are ahead of them in line — and the outgoing message even mentions this — this explanation may not remain at the front of the caller's mind because the point is not emphasized. The unexplained nature of the wait increases the stress of waiting, making callers less likely to stay on the line.

In addition, when wait times are not explained sufficiently, people may substitute their own thoughts and theories about what is going on, and what kind of experience they are likely to have. When thinking about past call center experiences, the memories that come to mind are likely not those when the hold time was short and reasonable, because of the concept of **availability**. That is, some memories are easier to call to mind, and what makes a memory readily available is different from what makes it useful or appropriate for a particular situation. In general, memories that are highly emotional are more available. People are, thus, more likely to recall instances when they have had extremely long and unpleasant waits, even if the number of times this happened was very small. A related "selection effect" is also likely: people may have heard stories about extremely bad experiences waiting on hold, but no one tells stories about calls of average length. Therefore, callers' reference points are probably set at the extreme and they expect a very long wait on hold.

Implications for Intervention Design

Table 5.1 shows the possible linkages between hypothesized behavioral concepts that might be associated with the hypothesized bottlenecks and proposed interventions for the NDVH call center. The center's outgoing message should set up callers' expectations of wait time in a way that emphasizes the reason for the wait and that it is worth holding on for an advocate. With its current phone system, NDVH does not have the capability to give real-time expected waits, but the outgoing message can give averages or simply keep the expectation general by stating, for example, "You may have to wait a few minutes for an advocate, but once we pick up we will work with you to find answers and resources for you." Additionally, since expectations can lead a caller to hang up at any time during the call, it is preferable to manage those expectations sooner in the call rather than later, because providing such a reference point may prevent a caller from hanging up.[13]

In addition, while callers may understand that they are waiting because other callers are ahead of them

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10 Voorhees et al. (2009).
11 See Kahneman (2011).
12 The perception of "wasted time" is growing as our culture generally becomes more accustomed to on-demand service (fast and available 24 hours) and our available leisure time decreases (Katz, Larson, and Larson, 1991).
13 Maister (1985).

TABLE 5.1

HYPOTHESIZED RELATIONSHIPS OF BOTTLENECKS, BEHAVIORAL CONCEPTS, AND COMPONENTS OF THE INTERVENTION
NATIONAL DOMESTIC VIOLENCE HOTLINE

HYPOTHESIZED BOTTLENECK AND POSSIBLE BEHAVIORAL CONCEPTS	PROPOSED INTERVENTION COMPONENT[a]			
	Provide Placebic Information	Account for Reason-Based Choice	Set Wait Expectations	Harness Social Norms
1. CALLING NDVH IS LIKELY TO BE STRESSFUL AND EMOTIONALLY PAINFUL BECAUSE OF THE CONTENT OF THE CALLS, AND WAITING ON THE LINE IN SILENCE MAY TRIGGER CALLERS TO RUMINATE ON FEARFUL THOUGHTS, WHICH CAN EXACERBATE THE STRESS OF WAITING.				
Cognitive load	✔	✔	✔	
Present bias	✔			
2. CALLERS DO NOT KNOW HOW LONG THEY WILL BE WAITING, AND THE UNCERTAINTY MAY MAKE THEM MORE LIKELY TO HANG UP.				
Reference points			✔	
Status quo bias			✔	
3. UNEXPLAINED WAITS SEEM LONGER THAN EXPLAINED WAITS.				
Availability			✔	
Stress of waiting			✔	✔

NOTES: As discussed in Chapter 2, behavioral concepts cannot be definitively identified, but rather are hypotheses derived from the behavioral diagnosis and design process that may explain behavioral bottlenecks. This table is based on the framework described in Chapter 2 and depicted in Table 2.1.

[a] Following are examples of proposed intervention components for the National Domestic Violence Hotline:
   Provide Placebic Information: Explain that NDVH advocates are busy with other calls.
   Account for Reason-Based Choice: Give callers a reason to wait on the line by explaining that an advocate will work with them.
   Set Wait Expectations: Tell callers they may have to wait a few minutes.
   Harness Social Norms: Refer to other callers who are waiting, to emphasize that the caller is not alone.

in line, this explanation can be emphasized. The experience of waiting becomes more tolerable, and the stress of waiting is decreased, when wait times are explained in a way that is seen as fair and justifiable.[14] This insight derives from the psychological phenomenon of **reason-based choice**, which explains that part of the difficulty in making a choice involves the need to construct a justification for that choice after it has been made. If the call center's prerecorded message explicitly provides reasons for waiting that align with desired behavior (like staying on the line), it will ease the caller's cognitive requirement of constructing the reason, making it more likely that this behavior occurs.[15] Further, explanations that provide reasons *and* explicitly tie the reasons to the wait are more likely to be successful. This can be true even when the reason is just **placebic information** — providing information that is already known, but in the form of an explanation. For example, one study found that an individual at a copy machine was more likely to let someone else use the machine first if that person asked, "May I go ahead of you, because I need to make copies?" as opposed to asking to go first without explaining why — even if the explanation was obvious.[16]

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14 Maister (1985).
15 Shafir, Simonson, and Tversky (1993).
16 This was generally found to be true when the level of requested effort was low. See Langer, Blank, and Chanowitz (1978).

In addition, the explanation of the wait time provides an opportunity to reinforce the idea that callers are not alone. After all, the existence of a queue means that other people are facing similar problems, which offers a chance to leverage the behavior of others, or **social norms**, to increase the perceived desirability of staying on the line.

Considerations When Designing a Behavioral Intervention

The power of behavioral science as a policy tool lies in its ability to shed fresh light on familiar problems and suggest new ways to tackle them. The work with NDVH illustrates this idea, as conventional approaches would likely focus on addressing the call center's resource limitations. However, in a period of limited budgets, programs will need to find innovative ways to better serve clients.

Nonetheless, it is important to think carefully about the mechanism by which the intervention may lead to improved program outcomes, because alleviating a bottleneck in one part of a system may not improve outcomes if there are systemwide constraints on capacity that are not addressed. For example, it is possible that the behavioral interventions described in this chapter will not lead to decreases in the call-abandonment rate, because implicit in the interventions is the assumption that if callers wait longer, more of them will reach advocates. That is, the interventions discussed in this chapter are based on the following assumptions:

- Advocates have time available to answer additional calls, but this free time is not aligned with the period when calls come in or when callers are put on hold, leading to abandoned calls.

- Advocates' availability and call receipt can be aligned if callers wait longer than they are currently waiting.

- Answering additional calls will not displace other calls, or if they do, the effect will be minimal and there will still be a net increase in calls answered.

  These assumptions may or may not be true; they reflect empirical questions.

Key Insights

The NDVH case study illustrates an intersection of two distinct concepts: willingness to wait and the psychology of scarcity, or the idea that when operating under a severe constraint, whether it is financial, mental, or physical, people behave differently.[17] Human beings respond to waiting in ways that are not always rational. An airline in Texas addressed customer complaints about time spent waiting for checked baggage by increasing the amount of time it took to walk to the baggage carousel. Complaints dropped dramatically, largely because of a change in the *perception* of wait time.[18] In theory, standing in one location for 10 minutes to receive your bag should be equivalent (or preferred because of lower exertion) to walking for 10 minutes to receive your bag. Yet, it is not. Most people have had to wait for long periods of time for a service. However, the solutions to wait time are even more critical at an organization like NDVH, where the stakes are high. Coupled with people's aversion to waiting is the extreme emotional distress of being in an abusive relationship. Extreme situations intensify everyday pressures. This relates to the psychology of scarcity, which might result in effects like "tunneling" — as time becomes limited, people focus on managing the next imminent crisis, which causes them to neglect other needs — or becoming distracted.[19] These concepts relate not only to this case study, but to other situations in which resources may be limited.

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17 On willingness to wait, see Maister (1985). On the psychology of scarcity, see Shafir and Mullainathan (2012).
18 See Martin (1983).
19 Shafir and Mullainathan (2012).

Conclusion

This report has provided an early overview of the application of behavioral economics concepts to human services programs, using the particular methodology of behavioral diagnosis and design that was developed by ideas42 and adapted to the Behavioral Interventions to Advance Self-Sufficiency (BIAS) project. The approach starts by defining a problem in terms of the desired outcome. The resulting problem statement does not presuppose the reason for the problem, to encourage program designers to approach potential solutions with an open mind.

The BIAS project has generated useful insights and recommendations thus far, but it is still in its early stages with respect to pilot-testing behavioral interventions using the rigorous methodology of random assignment. The process of behavioral diagnosis and design was refined throughout the first two years of the BIAS project, and while it is a systematic process, it is largely untested. Only when promising behavioral interventions are fully and rigorously tested can reliable conclusions be drawn about their impact on human services programs.

Based on the existing literature, BIAS-style interventions are expected to have effects that are moderate in size but meaningful to program administrators because of the relatively large scale they can achieve for a relatively low implementation cost.[1] It is also expected that effects will be observed on outcomes that are proximate to the targeted behavior — that is, immediate rather than longer-term outcomes (for example, focusing on the submission of applications to modify child support orders in Texas rather than on approval of the applications, or on the number of callers who hang up in the case of the National Domestic Violence Hotline rather than on reducing the incidence of domestic violence). Because most of the interventions will follow participants for less than one year, and because the specific focus is on behavioral solutions, the effects on longer-term outcomes of interest will likely not be detected as a part of the BIAS project. For example, if a behavioral intervention is launched that increases the number of parents who complete their child care subsidy recertification on time and thus avoid gaps in service, it is assumed that there would be long-term positive effects on the stability of parental employment (because the parents would face fewer obstacles to working) and on child development (because the children would receive more consistent care and their parents could give them a more stable environment) — but evaluations that are conducted under the BIAS project would not be able to verify that those outcomes were achieved. Rather, the behavioral intervention has been chosen because it mediates a pathway that leads to outcomes with broad policy significance.

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1   Allcott and Mullainathan (2010).

The BIAS project is the first foray of the Administration for Children and Families (ACF) into systematically considering the application of behavioral economics to the programs and populations it supports. As such, the project has a learning agenda for ACF and the BIAS team, as well as for program administrators and practitioners. The work to date has generated a number of key insights (as discussed in the conclusions of Chapters 3, 4, and 5), and it has produced two global insights: the value of closely observing a process and the importance of avoiding premature solutions.

The Value of Closely Observing a Process

The detailed consideration of the process by which services are offered has been shown to be a valuable exercise in its own right. With so many competing demands, program administrators often do not have the time to look closely at the way a program is being implemented after it is launched. As a result, administrators may rely on assumptions about what is happening in the field, and be surprised to discover the reality. As disorienting as this can be, it can lead to critical breakthroughs. In the experience of BIAS to date, it is usually very powerful to simply look closely at a program from the point of view of clients and frontline staff, evaluating the processes against the ultimate goals of the program. It is particularly valuable to do this with a behavioral lens because this narrows the focus of observation to the kinds of bottlenecks that do not require substantial amounts of funding to fix, and points to some interventions that can be tested.

The Importance of Avoiding Premature Solutions

The BIAS team has learned to proceed systematically and deliberately through the four phases of behavioral diagnosis and design in order to avoid the pitfall of jumping prematurely from a review of the program process to intervention ideas without fully understanding the possible causes of bottlenecks that might hinder the desired outcomes. This understanding comes from mapping the process from the user's point of view. It is tempting to jump directly to the application of behavioral solutions that are relatively inexpensive and easy to implement. But it is important to link the intervention idea to the potential psychological reasons for the bottleneck, to the extent possible, because otherwise the intervention may be ineffective or even produce negative results. The following examples demonstrate how this can happen.

The Opportunity NYC–Family Rewards demonstration was the first conditional cash transfer program to operate on a large scale in the United States. Families were offered the chance to earn money for completing any of 22 activities related to health, education, and work. The program used two methods to verify that an activity had been completed — either the participants submitted a completed "coupon" or program staff verified the completion of an activity through administrative records. Before the program was launched, academic researchers who were experts in the field encouraged the project team to make all the cash rewards administratively verifiable so that participants would not have any paperwork to manage. When they completed the activity, the payment would automatically appear in their bank accounts. In the view of the consultants, the burden associated with the paperwork of filling out and submitting the coupons could create an obstacle that would reduce both participation in these activities and receipt of rewards. In practice, the evaluation found that because many different cash rewards were offered for many different activities, participants needed strategies to remember all the activities for which they could earn those rewards. The coupons became a useful tool to increase the salience of each activity and, in turn, participants' motivation to meet the conditions for the payment. In a survey conducted with participants midway through the intervention, the administratively verified rewards were the ones families had the most difficulty keeping in mind.[2] Expanding the number of administratively verified rewards would likely have exacerbated the problem because the bottleneck was not related to the challenges of completing paperwork, but to memory. In other words, even "experts" can have faulty intuition, underscoring the value of behavioral diagnosis, design, and testing when developing social programs.

In their article entitled, "A Nudge Isn't Always Enough," Bronchetti and his colleagues summarized research in which they compared an "opt out" procedure as the default intervention with an "opt in" procedure for purchasing savings bonds during tax filing (a "savable moment" in the consumer finance literature).[3] That

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2   Riccio et al. (2010), p. 109.
3   Bronchetti, Dee, Huffman, and Magenheim (2011).

is, program group participants were automatically enrolled in a program to receive some of their federal tax refund in the form of savings bonds, rather than being able to choose how to receive their funds. If they were *not* interested in participating, they were responsible for "opting out" of the program. In contrast to other studies on the efficacy of defaults in the context of the 401(k), the authors found that the default, opt-out condition did not increase savings for their sample.[4] That is, study participants were just as likely to purchase the savings bonds whether they were automatically enrolled (default option, for the program group) or whether they had to actively enroll (control group), and the number of program group members participating in purchasing bonds was lower than researchers predicted.

Given the notable findings from studies that have examined the use of defaults,[5] Bronchetti's finding is an anomaly worthy of deeper consideration. The authors theorized that observing no effect for the default savings plan was most likely caused by the misapplication of the concept.[6] Before the experiment was conducted, the psychological factors that impeded saving were assumed to be procrastination, hassle factors, and forgetting — all of which would have been well managed with an "opt out" default. However, when study participants were surveyed about their tax refunds and saving goals after the experiment, they indicated that they had already decided how they intended to spend their refunds. The sample was made up of low-income people who had very limited disposable income. Their psychological pre-commitment to spending the money in particular ways was too powerful to be overridden. This is another case of failing to correctly identify the behavioral factors that come into play under the constraints of poverty before jumping to an intervention idea — the savings rate seems to have been low because people consider their money to be part of a particular spending "bucket" rather than completely fungible or because of people's tendency to be influenced by the status quo and, as a result, may have been more amenable to an intervention that altered the available options for decision-making before the tax filing appointment.

In the above cases, the impulse to apply a behaviorally informed solution preceded a clear understanding of the nature of the bottleneck that may have been causing the problem. That being said, the risk of misapplying behavioral economics to programs is mitigated when the program designers are engaged in ongoing performance monitoring or evaluation, and they approach behavioral design as an iterative process. Because behavioral diagnosis can lead to several hypothesized psychological bottlenecks, and each one may be associated with more than one potential behavioral solution, this process should be seen as "routine business" rather than as a one-time undertaking — one that embraces creative, client-centered approaches to service delivery.

Next Steps for the BIAS Project

Behavioral economics provides a new way of thinking about human services program design and a potentially powerful set of tools for improving program outcomes. The central insight of this science is that human services programs will be more effective if they take into account the psychological and behavioral tendencies that define human decision-making. The BIAS team will complete pilot tests of behavioral interventions in programs that are funded by the Administration for Children and Families in the areas of Temporary Assistance for Needy Families, child care, child support, and the National Domestic Violence Hotline. Each pilot is being evaluated rigorously using random assignment. Results will be published as they become available to further inform this burgeoning field.

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4   Madrian and Shea (2001); Choi, Laibson, Madrian, and Metrick (2004).
5   Johnson and Goldstein (2003).
6   In addition, the authors have presented two secondary hypotheses to explain the result: (1) the context in the study was sufficiently different from other studies in the literature; and (2) structural limitations may have prevented the expected finding from occurring. These explanations are of secondary importance for the discussion in this chapter, but relevant to thinking about behavioral interventions more generally. The explanation of context suggests that the intervention may have been more binding since money used to purchase a savings bond cannot be accessed for a full year, whereas default contributions to a 401(k) plan can be reversed with a phone call. The last explanation reflects resource constraints; the sample members may not have had enough resources (or had this perception) to save even a very small fraction of their return.

APPENDIX

Glossary of Select Behavioral Economics Terms

Affective response: Decision-making that is driven by a feeling or an emotion. Emotions can drive our choices much more than we expect, and "gut" decisions have far-reaching consequences. For example, "crimes of passion" may reflect a momentary affective response.

Anchoring: Decision-making that is based on first observations and other contextual factors that may or may not be obvious. That is, responses often depend on the way information is presented initially, and different presentations can yield different responses. For example, when taxi cab passengers were told that the range for tips was 20 to 30 percent, they perceived 20 percent as the low tip, even though it was double the usual average of 10 percent. In other words, they "anchored" on the range of 20 to 30 percent, which influenced their perception of a "low" tip — even though 10 percent was perceived as a low tip when they weren't presented with a range.[1] (See "Reference point.")

Angles on choice: The process of weighing multiple factors and determining how to use that information to make a decision or pursue a course of action. For example, when deciding whether to move to a new city, an individual might consider employment opportunities, distance from an airport, health care availability, schools, and so forth.

Automaticity: The process of making automatic, nonconscious choices. In many situations, the likely automatic process is to simply do nothing.

Availability: The tendency for particular memories to rise to the surface, even if they are not always the ones that are most helpful or desirable. Instead, some memories are simply more likely to come to mind, especially those that are associated with strong emotions.

Change blindness: The inability to notice all visual stimuli as a result of a limited attention span.

Changing the choice set: Altering the perception of available choices — for example, by modifying the availability or saliency of different options. In one study, purchases of jam increased when shoppers were presented with 6 varieties to choose from rather than 24 varieties.[2]

Channel factor: A feature of the environment or a situational detail that makes a behavior easier to accomplish. For example, providing students with a map to a campus health center can increase their use of public health services.

Choice architecture: The idea that decisions can be influenced by the way in which choices are presented. For example, organ donation registration can be the default on license renewals, requiring people to actually opt out if they don't want to be organ donors. (See "Default.")

Choice conflict: The inability to make a choice when the decision-making process requires too much time or mental energy. (See "Deliberation costs.")

Choice overload: The inability to compare choices across meaningful metrics because too many choices have been provided. An excess of choices for people can increase the burden on mental resources and the time and mental energy required to make a choice, reducing the net satisfaction that can be derived from making a decision or even paralyzing some individuals and preventing them from being able to make a decision at all. (See "cognitive load" and "deliberation costs.")

Cognitive load: Overburdened mental resources that impair individual decision-making. People typically think that they will be able to pay attention to information and then understand and remember it as long as it is important. However, an individual's mental resources — which are often taken for granted — are not unlimited and are more fallible than people often recognize. Challenges and emotional stress can drain these mental resources, and actually make it difficult to make good decisions.

Confirmation bias: The tendency of people to accept information that confirms their beliefs or hypotheses.

Default: A particular predetermined outcome that requires no action on the decision-maker's part. For example, holders of credit cards are often automatically placed on a list to receive marketing materials from various companies. In order to remove their name from this list, they must actively "opt out"; if they do nothing, they will remain on the list, which is the default option.

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1   Grynbaum (2009).
2   Iyengar and Lepper (2000).

Deliberation costs: The costs of making a decision — in time or in mental effort.

Discounting: Placing greater value on a present or short-term consequence than on a future consequence, for reasons like uncertainty or changing tastes. "Zero discounting" means that people value present and future experiences equally.

Forced choice: A program design that attempts to prevent people from being trapped by indecision when faced with a choice. In this approach, there is no default and one cannot move on without making a decision. (See "Default.")

Frame: The way in which information is presented. Every piece of information can be presented in different ways, and small changes in the wording of a message or a choice can drastically change the way it is perceived and the choices that people make with regard to it. Information is never evaluated in a neutral or impartial way, because every way of presenting information is a frame that leads people in one direction or another. (See "Framing.")

Framing (positive): Presenting information or choices in a way that accentuates positive aspects of the consequences or outcomes. For example, saying that a treatment has a "90 percent chance of saving your life" is the same as saying it has a "10 percent chance of resulting in death." But people prefer the treatment when framed in the first way. Positive framing can tap into personal values, identity, and emotion-based decision-making to motivate certain actions. (See "Reason-based choice" and "Affective response.")

Hassle factor: A feature or situational detail that makes a behavior harder to accomplish. This could be, for example, a small barrier to completing a task, such as filling out a form or waiting in line. While these factors may seem trivial and are often neglected in program design, reducing or eliminating them can have an outsized impact on outcomes.[3]

Heuristics: Simple questions or "rules of thumb" that are used when making difficult decisions. Even when a person is asked a very hard question that demands time and thought, an answer may come to mind immediately because the brain tends to substitute the difficult question with an easier one. For instance, the question "How happy are you with your life these days?" is difficult to answer: it requires an appraisal of all aspects of one's life. People tend to answer instead the much easier question, "How happy are you right now?"

Hot-cold empathy gap: The notion that people have difficulty predicting what they will want and how they will behave in affective states that are different from their current state. The idea is that human understanding is dependent on the current emotional state. For example, when one is happy, it is difficult to understand what it is like for one to be angry, and vice versa. (See "Affective response.")

Identity priming: Occurs when one identity (for example, being a female) influences a response to a stimulus. Decisions and actions differ depending on which identity is active, and identities can become active because of small changes in the environment. For example, priming someone's identity as a good student could boost her performance on an exam.

Implementation intention: A self-regulatory strategy, sometimes referred to as an "if-then plan," that increases the attainment of desired goals. The strategy takes the form of, "When situation X arises, I will implement response Y."

Limited cognition: A bounded capacity to process, understand, and recall information. Since people have a limited rate of information processing, they can only pay attention to, comprehend, and remember a restricted amount at any given time.

Loss aversion: The tendency for decisions and behavior to be influenced by the wish to avoid a loss. When a decision is framed in terms of a loss or a gain, it affects the decision-maker's response. When loss aversion is operating, people experience a loss as more painful than when they experience an equivalent gain as pleasurable. For example, when loss aversion is at work, the pain of losing $20 is greater than the pleasure of finding $20. Thus, people's preferences are skewed toward avoiding the loss. When program designers rely on loss aversion to, for example, increase the number of drivers who observe the speed limit, they believe that fining noncompliant drivers is more effective than rewarding compliant drivers.

Mere-exposure effect: A preference for the familiar.

Mental accounting: The set of cognitive operations that individuals and households use to organize, evaluate, and keep track of financial activities. People resist shifting their beliefs about financial resources even in response to traditional stimuli like price shocks. For example, after the housing market collapsed in 2007, people who wanted to sell their homes still expected to get the price at which the house had been valued during the housing boom.

Ostrich effect: The tendency to avoid undesirable information, even when that information might have significant negative implications, including matters of life and death. For example, people have been known to avoid checking on their investments during periods of economic downturns.[4]

Placebic information: An explanation comprising information that is already known or obvious. Providing such placebic information has been shown in certain circumstances to be effective at influencing behavior. For example, in one study, subjects at a copy machine permitted another individual to go ahead of them if that person said, "May I use the copy machine first, *because I have to make copies*?" This "explanation" was shown to be as effective at eliciting the desired response (to go ahead of the person in line) as providing a "real" explanation, like "because I'm in a rush."[5]

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3   Thaler and Sunstein (2008).
4   Galai (2006).
5   Note that this is generally true when the requested level of effort is low. See Langer, Blank, and Chanowitz (1978).

Plan-making: Committing to a specific plan for a goal that not only potentially facilitates accomplishing tasks, but also reduces the burden on an individual's mental resources. (See "Cognitive load.")

Present bias: Giving more weight to present concerns than to future ones. People tend to make plans to do unpleasant tasks "tomorrow," and make the same choice when "tomorrow" becomes "today."

Prospective memory: Remembering to perform a planned action or intention at the appropriate time.

Psychological distance: The "distance" (spatial, temporal, or probable) between an individual and some outcome or decision. When an event is psychologically distant, it is perceived in an abstract manner, and potentially important details are disregarded.

Psychology of scarcity: The pressure of negotiating life under conditions of poverty, which exacts a particularly high toll on cognitive resources.

Reason-based choice: The act of creating reasons or explanations for certain choices in order to resolve any conflicts about that choice and to justify the decision to oneself and to others.

Re-bias: The act of changing an individual bias in order to affect decision-making. For instance, a government program that targets a particular population may face a negative bias about government programs in general; the program designers would have to rely on re-biasing to change people's minds about such programs in order to get them to participate.

Reference point: A point of comparison, such as a past experience or a small contextual feature, that determines or influences people's reactions going forward. That is, human beings' emotional responses to what happens to them are determined not by the outcome itself, in absolute terms, but by the outcome relative to one's reference point.

Reminder: Prompting a specific piece of information to make it noticeable to an individual and increase the chances of acting on that information. Reminders often work when they are related to something the individual intends to do.

Social influence: Directly or indirectly fostering a behavior through direct or indirect persuasion. For example, an influential peer or authority figure can often establish the guidelines for socially appropriate and inappropriate behavior.

Social norm: Behavior that is established by others as a cue for one's own behavior, even when it is not directly relevant to a particular situation or person. For instance, people tend to perceive an outcome as more valuable if they see other people trying to attain that outcome. This psychological concept suggests that what matters is not just what other people are doing, but rather those with whom we compare ourselves, based on contextual factors.

Status quo bias: A bias that occurs when the current state of the world dominates an individual's decision-making. People can find it difficult to imagine that the world will be different tomorrow, or five minutes from now, and they often accept an outcome simply because it is the status quo.

Stress of waiting: Stress associated with waiting, which may cause one to become impatient, frustrated, and hostile. It is also time-consuming and expensive in terms of one's cognitive resources.

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