Executive Summary

Nudging Change In Human Services

Final Report of the Behavioral Interventions to Advance Self-Sufficiency (BIAS) Project

OPRE REPORT 2017-23

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NUDGING CHANGE IN HUMAN SERVICES:
FINAL REPORT OF THE BEHAVIORAL INTERVENTIONS TO
ADVANCE SELF-SUFFICIENCY (BIAS) PROJECT

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The Authors
A low-income mother holds two part-time jobs and needs reliable care for her child. Fortunately, she may be eligible for a child care voucher, permitting her to employ the services of a quality child care provider. The agency offices, which are typically open from 9:00 A.M. to 4:00 P.M., require her to take time out of her schedule to complete the complex application process. As a result, she misses her shift — and loses her pay. After two separate trips to apply, she is put on a waiting list. Given that her work hours are inconsistent, she may be required to go through recertification again in two months to prove she is still meeting the minimum number of hours required to receive the benefit. She needs to repeat separate, but similar, processes to receive food assistance and housing assistance, which do not coincide and cannot be completed together at one location.

Executive Summary

Research in behavioral economics has shown that small changes in the environment can make it easier for people to act and make decisions that support their goals.¹ For example, research suggests that small changes to make processes easier — such as simplifying application instructions, pre-populating forms with available required information, and streamlining procedures — can improve human services program design and outcomes.² The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project — sponsored by the Office of Planning, Research and Evaluation (OPRE) of the Administration for Children and Families (ACF) in the U.S. Department of Health and Human Services, and led by MDRC — used behavioral insights to address issues related to the operations, implementation, and efficacy of social service programs and

¹ Behavioral economics combines findings from various fields such as sociology, psychology, and economics. See Thaler and Sunstein (2008) and Kahneman (2011) for an overview. The term “behavioral science” is used interchangeably with “behavioral economics” in this report.

² Some of these and other barriers are noted as explanations for why low-income families do not use child care subsidies in Shlay, Weinraub, Harmon, and Tran (2004). Reducing the effort required to perform a task is one of four principles for influencing behavior change cited by The Behavioural Insights Team, a “social purpose” company dedicated to the application of behavioral science to public services; see Service et al. (2014).
policies. The goal was to learn how tools from behavioral science can be used to deliver programs more effectively and, ultimately, to improve the well-being of low-income children, adults, and families.

Between 2012 and 2015, 15 state and local agencies participated in the project, and the team launched 15 tests of behavioral interventions, involving close to 100,000 clients, with 8 of these agencies. These tests spanned three domains: child support, child care, and work support. All BIAS sites had at least one intervention with a statistically significant impact — or an impact that was unlikely to have resulted from chance alone — on a primary outcome of interest. The magnitude of the improvements typically ranged from 2 to 4 percentage points (in line with other behavioral research findings) — but impacts at 4 of the 8 agencies were much larger. These impacts may be considered large relative to the costs for the interventions, which ranged from $0.15 per person to $10.46 per person.

This final report of the BIAS project details the approach taken to use behavioral science concepts when designing or modifying human services programs, summarizes the common behavioral concepts that were incorporated into interventions across sites, provides operational lessons on implementing the behavioral diagnosis and design process (described below), and looks forward to what the future of applied behavioral science could entail. It also includes commentaries by leading economists and academics in public policy, as well as a practitioner involved in a BIAS project.  

**BEHAVIORAL DIAGNOSIS AND DESIGN PROCESS**

In all sites, the BIAS team used a method called “behavioral diagnosis and design” to identify potential behavioral bottlenecks to reaching desirable outcomes in human services programs. Then, adopting the perspective of the program’s clients and staff, the BIAS team searched for possible behavioral reasons for the bottlenecks — those related to decision-making processes and action — and tested the effects of behavioral interventions where appropriate. The process, depicted in Figure ES.1, consists of four phases:

1. **DEFINE:** The research team works with each human services agency to carefully define a problem in terms of the desired outcome, without presuming to know the reason for the problem. The goal of this phase is to develop a question that does not automatically suggest a particular solution, yet is precise enough to be testable.

2. **DIAGNOSE:** The team collects both qualitative and quantitative data to identify factors that may be causing the problem, and uses the data to develop theories based on behavioral research about why the hypothesized bottlenecks are occurring.

3. **DESIGN:** The team uses these theories and other behavioral insights to design an intervention aimed at ameliorating the hypothesized bottlenecks.

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3 Commentaries are provided by Marianne Bertrand, University of Chicago; Susan A. Brown, Franklin County Child Support Enforcement Agency; Sheldon Danziger, Russell Sage Foundation and University of Michigan; Crystal Hall, University of Washington and Office of Evaluation Sciences; Lawrence Katz, Harvard University; Philip Oreopoulos, University of Toronto; Sim Sitkin, Duke University and Behavioral Science and Policy Association; and Dilip Soman, University of Toronto.
**FIGURE ES.1** Behavioral Diagnosis and Design Process

4. **TEST**: The team evaluates the behavioral intervention using random assignment, the gold standard in evaluation methodology.

The process is ideally iterative, allowing for multiple rounds of hypothesis development and testing, and aims to connect the problem, behavioral bottleneck, and design solution. Most interventions were designed and put into the field within one calendar year, and data collection lasted for approximately six months.

**SIMPLER**

This report introduces a framework — SIMPLER — that describes the behavioral principles applied across BIAS tests: social influence, implementation prompts, making deadlines, personalization, loss aversion, ease, and reminders. Although each intervention was created independently while adher-

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4 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. For a more detailed description of behavioral diagnosis and design, see Richburg-Hayes et al. (2014a).
ing to the behavioral diagnosis and design approach, a retrospective look across the tests identifies common bottlenecks in many BIAS program areas that various human services settings may share. SIMPLER provides a framework for applying several behavioral science concepts that may be relevant to other human services programs.

SIMPLER — as shown in Figure ES.2 — illustrates how the BIAS team was able to create behavioral interventions to address bottlenecks such as the completion of complex, detailed forms required to participate in agency programs and to do so within the constraints of these systems. This framework provides a guide based on the experience of BIAS and does not encompass the full range of available behavioral techniques. 

**OPERATIONAL LESSONS**

Lessons were learned from all the project sites’ implementation of the behavioral diagnosis and design process, including those sites in which evaluations were not completed because of unanticipated changes in the operational context. In general, program administrators and staff used their engagement with the BIAS project to envision new approaches to service delivery. Staff were generally excited to participate in the work — despite the lack of discretionary funding to support their efforts and the interventions — and programs benefited from the process beyond the specific interventions that were tested. Several primary operational lessons emerged from this work:

- **BEHAVIORAL DIAGNOSIS IS MOST RELIABLE AND EFFICIENT WHEN PROGRAMS HAVE HIGH-QUALITY PERFORMANCE DATA.** Given that the first step in the diagnosis process is to collect information about the way a program has functioned in the past, access to detailed administrative records on proximal or process outcomes (for example, how many people attend their first recertification appointment to maintain their benefits) is important. The team often had to rely on qualitative and incomplete quantitative data sources.

- **THE BEHAVIORAL DIAGNOSIS PROCESS LEADS TO THE DISCOVERY OF AREAS OF TENSION AND NEW INSIGHTS FOR STAFF AT EVERY LEVEL.** The diagnosis process tends to reveal mismatches at several levels: between policy and practice, between the rules governing a process and the way frontline staff implement them, and between what staff believe they have communicated and what clients understand. Simplifying program procedures and eliminating barriers to following those procedures generally required resolving these contradictions.

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5 The SIMPLER framework incorporates many of the common types of behavioral interventions cataloged in a review of field experiments. For a short description of each of these interventions, see Appendix Table A.2 in this report. For a more detailed description of each and examples of how the intervention has been applied, see Richburg-Hayes, et al. (2014a).
SIMPLIFICATION IS NOT (ALWAYS) SIMPLE. One of the reasons program procedures can become complicated is because a seemingly simple issue may be affected by multiple interests, policy considerations, and laws. Any attempt to make a change requires a thorough understanding of why programs operate the way they do, and many changes must be reviewed by various interested parties and evaluated according to the impact on multiple areas, such as compliance with law, mandatory timeframes, and client privacy.

INNOVATION CAN BE HINDERED BY OUT-OF-DATE TECHNOLOGY. Government agencies are becoming increasingly sophisticated in the use of personalized and digital communication, but some of this infrastructure is still in development. As a result of legacy technology (that is, older technology and computer systems that need updating), many agencies struggle to upgrade their methods in ways that align with insights from behavioral science.

FIGURE ES.2 Behavioral Techniques Used in BIAS Interventions

<table>
<thead>
<tr>
<th>Technique</th>
<th>Description</th>
<th>BIAS Site</th>
<th>Message to Enrollees</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCIAL INFLUENCE</td>
<td>Persuade by referencing peers</td>
<td>in Texas</td>
<td>Other parents have had courts lower their child support by $200 to $500 per month.</td>
</tr>
<tr>
<td>IMPLEMENTATION PROMPT</td>
<td>Bridge intention with action</td>
<td>in Indiana</td>
<td>Remember to bring: [ ] Proof of address</td>
</tr>
<tr>
<td>MAKING DEADLINES</td>
<td>Make deadlines prominent</td>
<td>in New York</td>
<td>All you need to do is come to a Food Bank office by March 29, 2014.</td>
</tr>
<tr>
<td>PERSONALIZATION</td>
<td>Individualize interaction</td>
<td>in Oklahoma</td>
<td>This notice includes a red list of your DHS clients whose benefits will end on the last day of this month.</td>
</tr>
<tr>
<td>LOSS AVERSION</td>
<td>Emphasize risk of losses</td>
<td>in California</td>
<td>By not attending your appointment, you may: LOSE up to $2,508 a year in cash benefits.</td>
</tr>
<tr>
<td>ASE</td>
<td>Reduce steps in a process</td>
<td>in Washington</td>
<td>(via a tip sheet) Forms need to have: 1. A signature every place that asks for it. 2. A date next to every signature.</td>
</tr>
<tr>
<td>REMINDERS</td>
<td>Use phone calls, texts, postcards</td>
<td>in Ohio</td>
<td>Your child support payment is due in 3 days. Pay on time to avoid penalties.</td>
</tr>
</tbody>
</table>
The operational findings suggest that using behavioral insights is a way for innovators within the government to gain a voice and justify, in many cases, doing more for clients. However, in order for behavioral diagnosis and design to become a regular part of government’s continuous program improvement efforts, there is a need to have a more flexible technological infrastructure, data systems that collect process and outcome data and produce reports on demand, and staff with time available to engage in innovation or special projects who can lead the charge from within.

**IMPACT FINDINGS**

In 11 of the 15 randomized controlled trials that were conducted for the BIAS project — and in each of the eight sites where tests were launched — behavioral “nudges,” defined as subtle and modest changes that help improve individual decision making (such as reminders or simplified, personalized letters), had a statistically significant impact on at least one primary outcome of interest, as shown in Table ES.1.

While most of these impacts are small to moderate, they suggest that the corresponding interventions are worthwhile given their low cost and the relatively low effort they require to implement. In addition, several such interventions — when combined with more traditional approaches — may yield accumulated impacts to produce outsized improvements. In general, the project’s results demonstrate the notable promise of behavioral interventions as a tool that agencies can use to improve the efficacy and service delivery of their programs.

**IMPLICATIONS AND NEXT STEPS**

Nudges are an important aspect of the behavioral toolkit, but there is more to explore than these process changes. For example, principles from behavioral science can be integrated at two critical stages beyond program implementation (the level of all the sites in BIAS): program design (local or state level) and policy formulation (state or federal level). The findings from the BIAS project have implications for future directions for behavioral science in public policy. In addition to highlighting the results of the BIAS tests across sites — illustrating, for example, how behavioral economics might be used to enhance the delivery of child support services — the full report considers larger lessons about how behavioral economics can be applied to human services delivery for low-income populations. It explains how leverage points can be identified within programs where the application of behavioral insights could improve the system, and it provides a framework for designing different types of behavioral interventions — from smaller-scale nudges to policy restructuring. The full report also discusses limitations to this approach.

As an alternative to the long-standing rational economic model on which many programs are based, behavioral economics offers a tool to reduce the cognitive and administrative burdens that low-income families often face in order to receive benefits or services.⁶ Some commentators note that

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⁶ See the commentaries of Sheldon Danziger following Chapter 1 and Marianne Bertrand following Chapter 6 in the full report.
**TABLE ES.1** Summary of BIAS Findings, by Domain

<table>
<thead>
<tr>
<th>Problem of Interest</th>
<th>State Description</th>
<th>Intervention Results</th>
<th>Sample Size</th>
<th>Estimated Intervention Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHILD SUPPORT</strong></td>
<td></td>
<td>BIAS group (%) Status quo (%) = Impact (%)</td>
<td>= 1,000 people</td>
<td>Per person/month</td>
</tr>
<tr>
<td>Increase order modification requests by incarcerated noncustodial parents</td>
<td>Texas</td>
<td>38.7 – 27.7 = 11.0***</td>
<td>🔄</td>
<td>$1.73</td>
</tr>
<tr>
<td></td>
<td>Washington</td>
<td>38.7 – 27.7 = 11.0***</td>
<td>🔄</td>
<td>$10.46</td>
</tr>
<tr>
<td></td>
<td>Ohio, Franklin County</td>
<td>51.5 – 48.5 = 2.9***</td>
<td>🔄</td>
<td>$2.53</td>
</tr>
<tr>
<td></td>
<td>Ohio, Franklin County</td>
<td>51.5 – 48.5 = 2.9***</td>
<td>🔄</td>
<td>$2.53</td>
</tr>
<tr>
<td></td>
<td>Ohio, Cuyahoga County</td>
<td>40.7 – 38.2 = 2.4***</td>
<td>🔄</td>
<td>$3.25</td>
</tr>
<tr>
<td></td>
<td>Ohio, Cuyahoga County</td>
<td>50.5 – 47.3 = 3.2**</td>
<td>🔄</td>
<td>$3.25</td>
</tr>
<tr>
<td></td>
<td>Ohio, Cuyahoga County</td>
<td>50.5 – 47.3 = 3.2**</td>
<td>🔄</td>
<td>$3.25</td>
</tr>
<tr>
<td></td>
<td>Ohio, Cuyahoga County</td>
<td>36.4 – 35.7 = 0.6</td>
<td>🔄</td>
<td>$0.40</td>
</tr>
<tr>
<td></td>
<td>Ohio, Cuyahoga County</td>
<td>54.8 – 52.5 = 2.3</td>
<td>🔄</td>
<td>$0.50</td>
</tr>
<tr>
<td>Increase payment rates on existing child support orders</td>
<td>Indiana</td>
<td>14.7 – 12.6 = 2.1*</td>
<td>🔄</td>
<td>$1.40</td>
</tr>
<tr>
<td></td>
<td>Indiana</td>
<td>52.6 – 50.0 = 2.6*</td>
<td>🔄</td>
<td>$1.93</td>
</tr>
<tr>
<td></td>
<td>Indiana</td>
<td>54.7 – 44.1 = 10.6***</td>
<td>🔄</td>
<td>$2.79</td>
</tr>
<tr>
<td></td>
<td>Oklahoma</td>
<td>36.7 – 34.4 = 2.4*</td>
<td>🔄</td>
<td>$1.10</td>
</tr>
<tr>
<td>Increase on-time subsidy renewals</td>
<td>New York</td>
<td>28.5 – 16.5 = 12.0***</td>
<td>🔄</td>
<td>$1.75</td>
</tr>
<tr>
<td></td>
<td>New York</td>
<td>34.8 – 34.3 = 0.5</td>
<td>🔄</td>
<td>$1.30</td>
</tr>
<tr>
<td></td>
<td>California</td>
<td>29.2 – 25.6 = 3.6*</td>
<td>🔄</td>
<td>$1.79</td>
</tr>
</tbody>
</table>

**WORK SUPPORT**

<table>
<thead>
<tr>
<th>Problem of Interest</th>
<th>State Description</th>
<th>Intervention Results</th>
<th>Sample Size</th>
<th>Estimated Intervention Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase meeting attendance for tax credit program</td>
<td>New York</td>
<td>28.5 – 16.5 = 12.0***</td>
<td>🔄</td>
<td>$1.75</td>
</tr>
<tr>
<td></td>
<td>New York</td>
<td>34.8 – 34.3 = 0.5</td>
<td>🔄</td>
<td>$1.30</td>
</tr>
<tr>
<td>Increase engagement in Temporary Assistance for Needy Families</td>
<td>California</td>
<td>29.2 – 25.6 = 3.6*</td>
<td>🔄</td>
<td>$1.79</td>
</tr>
</tbody>
</table>

*continued*
The focus on small changes made popular by Richard Thaler and Cass Sunstein’s book *Nudge* may counterproductively restrain how policymakers and administrators currently conceive of using behavioral sciences insights when formulating public policy. Several of the commentators note that an extension of the behavioral “toolbox” is important to induce longer-term changes in behavior, as traditional nudges like the ones studied in this report seem most effective when they are aimed at immediate, short-term behavioral changes, such as getting a public benefits client to attend a required meeting with a case worker.

In an effort to move beyond nudges, ACF is expanding the human services program areas examined through a behavioral science lens with the BIAS Next Generation project, which is geared toward exploring more intensive behavioral interventions that affect individuals as well as entire systems.
In this way, BIAS Next Generation is focused on the design of new, system-level interventions that would implement rules incorporating behavioral insights, in addition to designs to get low-income individuals to respond more effectively to programs through nudges.

REFERENCES FOR EXECUTIVE SUMMARY


EARLIER PUBLICATIONS FROM THE BEHAVIORAL INTERVENTIONS TO ADVANCE SELF-SUFFICIENCY (BIAS) PROJECT

Simplify, Notify, Modify: Using Behavioral Insights to Increase Incarcerated Parents’ Requests for Child Support Modifications

Cutting Through Complexity: Using Behavioral Science to Improve Indiana’s Child Care Subsidy Program

Framing the Message: Using Behavioral Economics to Engage TANF Recipients

Nudges for Child Support: Applying Behavioral Insights to Increase Collections

Engaging Providers and Clients: Using Behavioral Economics to Increase On-Time Child Care Subsidy Renewals

The Power of Prompts: Using Behavioral Insights to Encourage People to Participate
Reminders to Pay: Using Behavioral Economics to Increase Child Support Payments

Taking the First Step: Using Behavioral Economics to Help Incarcerated Parents Apply for Child Support Order Modifications

Behavioral Economics and Social Policy: Designing Innovative Solutions for Programs Supported by the Administration for Children and Families