Nudging Change In Human Services

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

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FINAL REPORT OF THE BEHAVIORAL INTERVENTIONS TO ADVANCE SELF-SUFFICIENCY (BIAS) PROJECT

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AUTHORS

Lashawn Richburg-Hayes, Caitlin Anzelone,
Nadine Dechausay with Patrick Landers

SUBMITTED TO

Emily Schmitt, Project Officer

Office of Planning, Research and Evaluation
Administration for Children and Families
U.S. Department of Health and Human Services

PROJECT DIRECTOR

Lashawn Richburg-Hayes
MDRC, 16 East 34th Street, New York, NY 10016

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Nudging Change In Human Services

Overview

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. The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project, launched in 2010, was the first major project to apply behavioral insights to the human services programs that serve poor and vulnerable families in the United States. The goal of the project — sponsored by the Office of Planning, Research and Evaluation of the Administration for Children and Families in the U.S. Department of Health and Human Services, and led by MDRC — was to learn how tools from behavioral science could be used to deliver program services more effectively and, ultimately, improve the well-being of low-income children, adults, and families.

Following a systematic approach called behavioral diagnosis and design, 15 state and local agencies participated in the project, which consisted of identifying problems that are appropriate for behavioral interventions, designing interventions, and conducting rigorous tests — where appropriate — to determine whether the interventions improved outcomes. The team launched 15 tests of behavioral interventions, involving close to 100,000 clients, in eight of the participating agencies. These tests spanned three domains: child support, child care, and work support. While each intervention was customized to fit its context, all involved at least one of the behavioral principles described by the "SIMPLER" framework, which stands for social influence, implementation prompts, making deadlines, personalization, loss aversion, ease, and reminders. Evaluated through randomized controlled trials, all BIAS sites had at least one intervention with a statistically significant impact 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, in several cases, impacts 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.

The project's findings suggest that small changes in, for instance, program outreach or the way that information is conveyed can help reduce some of the complexities that low-income populations face when they interact with human services agencies. While such "nudges" — defined as subtle and modest changes that help improve individual decision making — are shown to be an important aspect of the behavioral toolkit, the BIAS findings also suggest that it may be fruitful to extend the approach beyond program implementation to program design (at the local or state level) and policy formation (at the state or federal level). In this way, changes to program rules and agency practices may induce larger or longer-term changes in behavior among both clients and program staff.

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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.[3]

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:

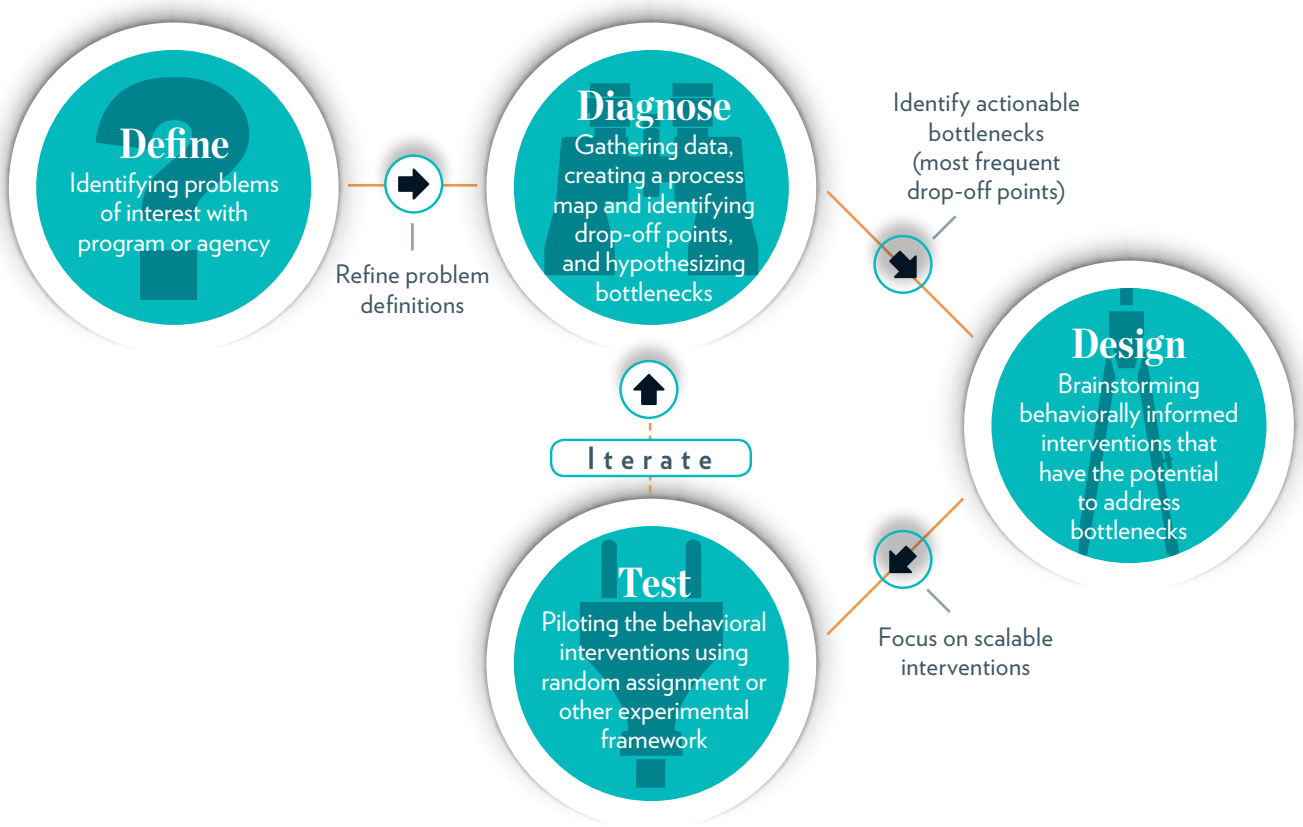
1. **DEFINE:** The research team works with each human services agency to carefully define a problem in terms of the desired outcome, without presuming to know the reason for the problem. The goal of this phase is to develop a question that does not automatically suggest a particular solution, yet is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

[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.[4] 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-

[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.[5]

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.

[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

Technique	Description	BIAS Site	Message to Enrollees
S OCIAL INFLUENCE	Persuade by referencing peers	in Texas →	Other parents have had courts lower their child support by $200 to $500 per month.
I MPLEMENTATION PROMPT	Bridge intention with action	in Indiana →	Remember to bring: ☐ Proof of address
M AKING DEADLINES	Make deadlines prominent	in New York →	All you need to do is come to a Food Bank office by March 29, 2014.
P ERSONALIZATION	Individualize interaction	in Oklahoma →	This notice includes a red list of your DHS clients whose benefits will end on the last day of this month.
L OSS AVERSION	Emphasize risk of losses	in California →	By not attending your appointment, you may: LOSE up to $2,508 a year in cash benefits.
E ASE	Reduce steps in a process	in Washington →	(via a tip sheet) Forms need to have: 1. A signature every place that asks for it. 2. A date next to every signature.
R EMINDERS	Use phone calls, texts, postcards	in Ohio →	Your child support payment is due in 3 days. Pay on time to avoid penalties.

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

[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

Each test used a customized behavioral intervention for a desired outcome.		While effects were usually modest...					... they are meaningful due to their scalability...	... and low cost.
Problem of Interest	State	Intervention Results					Sample Size	Estimated Intervention Cost
		BIAS group (%)	–	Status quo (%)	=	Impact	= 1,000 people	Per person/ month
CHILD SUPPORT								
Increase order modification requests by incarcerated noncustodial parents	Texas	38.7	–	27.7	=	11.0***		$1.73
	Washington	41.3	–	9.4	=	31.9***		$10.46
Increase payment rates on existing child support orders	Ohio, Franklin County[a]	51.5	–	48.5	=	2.9***		$2.53
	Ohio, Franklin County[b]	57.2	–	57.9	=	-0.8		$0.15
	Ohio, Cuyahoga County[c]	40.7	–	38.2	=	2.4***		$3.25
	Ohio, Cuyahoga County[d]	50.5	–	47.3	=	3.2**		$3.25
	Ohio, Cuyahoga County[e]	36.4	–	35.7	=	0.6		$0.40
	Ohio, Cuyahoga County[f]	54.8	–	52.5	=	2.3		$0.50
CHILD CARE								
Increase take-up of quality-rated providers	Indiana	14.7	–	12.6	=	2.1*		$1.40
Increase attendance at first scheduled renewal appointment	Indiana[g]	52.6	–	50.0	=	2.6*		$1.93
	Indiana[h]	54.7	–	44.1	=	10.6***		$2.79
Increase on-time subsidy renewals	Oklahoma[i]	36.7	–	34.4	=	2.4*		$1.10
WORK SUPPORT								
Increase meeting attendance for tax credit program	New York[j]	28.5	–	16.5	=	12.0***		$1.75
	New York[k]	34.8	–	34.3	=	0.5		$1.30
Increase engagement in Temporary Assistance for Needy Families	California	29.2	–	25.6	=	3.6*		$1.79

continued

SOURCE: MDRC calculations using agency data.

NOTES: Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[a] This test was targeted to noncustodial parents not currently being sent a notice of payment due from the state. Given that the Franklin County study involved a factorial design involving five intervention groups and one control group, the findings show the outcome for the combined intervention groups. This corresponds to Test 1 in the site report (Baird et al., 2015). The highest cost of the various intervention arms is shown. The average cost across all arms is lower.

[b] This test was targeted to noncustodial parents currently being sent a notice of payment due from the state. The test measures the efficacy of the behaviorally informed reminder notice over the version used by the state.

[c] This test evaluated a paper reminder for those without cell phone numbers on file. The Cuyahoga study involved three distinct tests; the findings from the first test are depicted in the table (Baird, Cullinan, Landers, and Reardon, 2016).

[d] This test evaluated the use of paper reminders for those with cell phones on file. This corresponds to the second test in the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

[e] The findings are from a test of behaviorally redesigned payment reminders sent to parents to whom a notice was already being sent. This intervention corresponds to the third test in the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

[f] The findings show the impact of a new welcome letter for parents with new child support orders — the fourth test of the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

[g] This test evaluated streamlined materials versus the agency's recertification materials. This corresponds to Round 1 in the Indiana report (Dechausay and Anzelone, 2016).

[h] This test represents a rapid-cycle iteration of the prior test, adding a behavioral solution to simplify the work determination instructions for the BIAS group. This corresponds to Round 2 in the Indiana report (Dechausay and Anzelone, 2016).

[i] The figures reported for this test represent an intervention targeted at child care providers to encourage them to help their clients renew their child care benefit on time (Mayer, Cullinan, Calmeyer, and Patterson, 2015).

[j] This test represents a study of behavioral postcards and behavioral text messages through a factorial design. The row entry compares the highest-intensity outreach — combined behavioral postcards and behavioral text messages — with standard postcards. This corresponds to Round 1 in the Paycheck Plus report (Dechausay, Anzelone, and Reardon, 2015).

[k] This test represents a rapid-cycle iteration of the prior test, changing the meeting format to permit phone calls for the BIAS group. This corresponds to Round 2 in the Paycheck Plus report (Dechausay, Anzelone, and Reardon, 2015).

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

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

Richburg-Hayes, Lashawn, Caitlin Anzelone, Nadine Dechausay, Saugato Datta, Alexandra Fiorillo, Louis Potok, Matthew Darling, and John Balz. 2014a. *Behavioral Economics and Social Policy: Designing Innovative Solutions for Programs Supported by the Administration for Children and Families*. OPRE Report 2014-16a. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Richburg-Hayes, Lashawn, Caitlin Anzelone, Nadine Dechausay, Saugato Datta, Alexandra Fiorillo, Louis Potok, Matthew Darling, and John Balz. 2014b. *Behavioral Economics and Social Policy: Designing Innovative Solutions for Programs Supported by the Administration for Children and Families. Technical Supplement: Commonly Applied Behavioral Interventions*. OPRE Report 2014-16b. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Service, Owain, Michael Hallsworth, David Halpern, Felicity Algate, Rory Gallagher, Sam Nguyen, Simon Rudd, Michael Sanders, with Marcos Pelenur, Alex Gyani, Hugo Harper, Joanne Reinhard, and Elspeth Kirkman. 2014. *EAST: Four Simple Ways to Apply Behavioural Insights*. London: The Behavioural Insights Team.

Shlay, Anne B., Marsha Weinraub, Michelle Harmon, and Henry Tran. 2004. "Barriers to Subsidies: Why Low-Income Families Do Not Use Child Care Subsidies." *Social Science Research* 33, 1: 134-157.

Thaler, Richard H., and Cass R. Sunstein. 2008. *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.

Nudging Change In Human Services

1 Introduction to Applied Behavioral Science

> "Humans make mistakes. A well-designed system expects its users to err and is as forgiving as possible."
>
> — **Richard Thaler and Cass Sunstein,** *Nudge: Improving Decisions About Health, Wealth, and Happiness*

A sizable proportion of people who are eligible for safety net programs in the United States fail to participate — lowering the potential for these programs' effectiveness in supporting upward economic mobility. Research suggests that small, targeted interventions can improve engagement in such programs.[1] For example, the federal Earned Income Tax Credit supports low-income workers by providing them with up to an additional 45 cents for every dollar they earn.[2] This extra money amounts to a substantial income supplement, with the total benefit at tax time in 2015 averaging more than $2,400.[3] However, 20 percent of eligible households do not claim this benefit.[4] Based on findings from a field experiment, researchers estimate that this take-up rate could be improved by another 3 percentage points by merely sending an additional, simplified mailing to current non-claimants.[5]

Changes to communications and other small features of the *design* and *implementation* of programs can influence the likelihood that a program will meet its stated goal. In recent years, insights on the power of these small "nudges" from the field of behavioral economics have gained increasing prominence.[6] The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project, launched in 2010, is the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States. 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, the BIAS project applies behavioral insights to issues related to the operations, implementation, and efficacy of social service programs and

[1] Rodrigue and Reeves (2015).

[2] This calculation depends on household size (Falk and Crandall-Hollick, 2016).

[3] Internal Revenue Service (2015).

[4] Internal Revenue Service (2016).

[5] Bhargava and Manoli (2015).

[6] The term "behavioral science" is used interchangeably with "behavioral economics" throughout this report to refer to insights from various related fields such as sociology and psychology.

policies. The goal of the project is to learn how tools from behavioral science could be used to deliver program services more effectively and, ultimately, improve the well-being of low-income children, adults, and families.

This final report from the BIAS project summarizes and synthesizes project lessons and findings. This chapter briefly reviews behavioral economics, the history of its research and policy impact, and the reasons for applying it to human services and other anti-poverty programs. It next provides an overview of the BIAS project, including the policy areas of focus and problems addressed. Following the chapter is a commentary by Sheldon Danziger, President of the Russell Sage Foundation, and Distinguished University Professor of Public Policy Emeritus at the Gerald R. Ford School of Public Policy, University of Michigan. The remainder of the report reviews the accomplishments, findings, and lessons of the BIAS project in more detail.

OVERVIEW OF BEHAVIORAL SCIENCE

Policymakers and program designers often rely on neoclassical, or traditional, economic theory as a guiding tool.[7] This framework frequently involves assumptions about participant behavior, such as that program participants will weigh costs and benefits and make "rational" decisions (defined in economics as using all available information to make the best decisions to maximize well-being).[8] However, a growing body of evidence shows that neoclassical economic theory cannot, by itself, account for all the ways people act in the real world. Research from psychology and other behavioral sciences demonstrates that humans do not perfectly follow the assumptions made in economic models. For example, individuals' attention, self-control, and other cognitive resources are limited and can be overwhelmed, and it is unlikely that most people use all available information to make a decision.[9] Consider the last few times you went to the supermarket.

- Did you remember to buy everything you needed, or did you forget an item you mentally added to your shopping list earlier in the week?
- Did you buy only what you were looking for, or did an eye-catching item or deal prompt you to make an impulse purchase that you later regretted?
- Did you carefully compare all of your options when viewing the store's selection and prices, or did you stick to familiar brands, sizes, and types of goods?

[7] Mullainathan and Thaler (2000). In this report, neoclassical economics is defined as the conventional economics paradigm taught in introductory university courses that uses models composed of "rational" economic agents.

[8] Mullainathan and Thaler (2000).

[9] Devoting attention to performing one difficult task is documented to reduce one's ability to "spend" attention on other tasks. Similarly, research suggests that people may have a limited amount of self-control at any moment in time, so exercising restraint in some way may deplete a person's available stock of self-control. Finally, humans have inherent limits on cognitive ability, so they "economize" on cognitive resources when making decisions. See Chapter 1 of Richburg-Hayes et al. (2014a) for a more detailed discussion.

In behavioral economics, findings from economics, psychology, and other social sciences are used to form a more realistic representation of real-world decision making. Decades of research provide rigorous evidence about the specific ways in which human behavior can deviate from the predictions of traditional economic theory.[10] In many areas of interest to public policy, insights from behavioral science can help produce more accurate predictions than those of traditional economic models alone and suggest ways to improve policy and practice.

Recent Developments in Behavioral Science Research and Public Policy

While economics has a rich history of prominent thinkers attempting to incorporate more realistic depictions of human behavior into their work — ranging from Adam Smith to John Maynard Keynes and Herbert Simon — by the mid-twentieth century the neoclassical or traditional models of "rational" economic agents had come to dominate economics.[11] Then, beginning in the late 1960s, Amos Tversky and Daniel Kahneman collaborated on work that was the start of the field of research on judgment and decision making.[12] Among other breakthroughs, Kahneman and Tversky studied decision anomalies (decisions that are unexpected or irrational) and developed a new model of decision making under risk. This new model, called prospect theory, showed that individuals mentally weigh losses more heavily than gains of equal size relative to a reference point.[13] Prospect theory has many real-world implications, such as potentially explaining why many retirees choose not to purchase annuities — a form of insurance that provides a fixed sum of money each year for the rest of one's life. Annuities are designed to protect against the risk of outliving one's assets and not having enough financial resources for later years. This risk is real, as people are generally living longer, increasing the likelihood that they will run out of assets in their lifetime. One reason why retirees may not purchase annuities is because they may be concerned about the chance of dying unusually early. Such an event would result in "losing" the money they placed into the annuity. Prospect theory predicts that individuals may weight this chance more than the chance of living longer than expected and getting back more money than they invested.[14]

Other insights began to emerge to help explain patterns of actual behavior that could not be explained by traditional economic models. For example, Richard Thaler coined the idea of "mental accounting." While traditional economic thinking suggests that individuals make their decisions within a single mental, organizational framework, Thaler demonstrated that individuals actually

[10] See Rabin (1998) and DellaVigna (2009) for overviews of the field.

[11] For information about the behavioral aspects of the work of Adam Smith, John Maynard Keynes, and Herbert Simon, see Angner and Loewenstein (2007); Camerer and Loewenstein (2004).

[12] This school of thinking is also sometimes referred to as "heuristics and biases" for its emphasis on the rules of thumb and other decision-making practices that sometimes lead people to make severe, systemic errors. See Kahneman (2003); Kahneman (2011); Fox (2015).

[13] In addition to this concept of "loss aversion," prospect theory covers three other anomalies: a strong preference for certainty over gambles, a consideration for relative gains and losses as opposed to final income and wealth (a concept known as relative positioning), and an underweighting of small probabilities (which can result in highly risky behavior in choices that involve sure losses). See Kahneman and Tversky (1979).

[14] Hu and Scott (2007).

maintain multiple mental "accounts," each specific to a different type of decision.[15] Decision-making factors cannot easily move across these accounts. For example, when gas prices fall, Americans are more likely to apply the savings back into gasoline — in some cases actually switching from buying regular to premium fuel — than they would if they experienced other changes in their net income, such as falling child care costs.[16]

Starting in the early 2000s, researchers began regularly applying these ideas to real-world policy issues like retirement security, labor supply, and economic development.[17] The book *Nudge* popularized the idea that small changes to an environment based on behavioral science can produce outsized effects.[18] Several of these ideas were later incorporated into U.S. federal policymaking.[19] Some early examples of policy informed by behavioral science include encouraging the expansion of automatic enrollment for retirement savings plans and simplifying higher education financial aid applications and processes.[20] The idea of nudges and other behaviorally informed changes to policymaking quickly gained attention around the world, particularly in the United Kingdom. In 2010, the British government established the Behavioural Insights Team, the first government "nudge unit" charged with using behavioral approaches to transform government and major areas of policy.[21]

In the same year, ACF initiated the BIAS project. ACF is responsible for more than 60 programs and over $53 billion in funding to promote the economic and social well-being of families, children, individuals, and communities. ACF staff recognized that its programs were frequently grounded in traditional economic assumptions about human behavior. For example, policymakers might enact extensive application procedures for some public benefits that require applicants to submit various documents in order to target benefits to those who are most in need. However, behavioral economics research suggests that most individuals in crisis situations may find it difficult to focus on the numerous details and appointments, given the cognitive burden of addressing their immediate needs or crises.

Since the start of BIAS, the application of behavioral insights to program delivery, policymaking, and research has expanded rapidly.[22] Academics are increasingly identifying real-world implica-

[15] Thaler (1985).

[16] Applebaum (2015).

[17] For example, researchers studied the effects of giving workers the opportunity to commit in advance to allocating a portion of their future raises toward retirement savings (Benartzi and Thaler, 2004), the tendency of more impatient individuals to exit unemployment faster (DellaVigna and Paserman, 2005), and the way in which restrictive savings products can help individuals build assets (Ashraf, Karlan, and Yin, 2006).

[18] Thaler and Sunstein (2008).

[19] Sunstein (2013b).

[20] U.S. Government Accountability Office (2009); Council of Economic Advisers (2009). Simplifying the *Free Application for Federal Student Aid* (FAFSA) was also bolstered by the compelling findings of an experiment by Bettinger, Long, Oreopoulos, and Sanbonmatsu (2012).

[21] Cabinet Office Behavioural Insights Team (2011).

[22] Ly and Soman (2013); Whitehead et al. (2014).

tions by researching how behavioral insights can, for example, help reduce energy use by consumers, create more effective "academic mindsets" for students, or contribute to an understanding of how psychological barriers affect access to legal counsel.[23] In addition, behavioral units have been launched at The World Bank and by the governments of Australia, Canada, Singapore, and numerous European nations.[24] The White House created a federal Social and Behavioral Sciences Team in 2014, and an executive order in 2015 directed federal agencies to use behavioral science insights to serve the American people better.[25] Table 1.1 provides examples of behavioral economics research and policymaking across a wide variety of fields.

Applying Behavioral Science to Poverty Research and Policy

Behavioral science research that is related to low-income individuals and government programs has increased since the launch of the BIAS project. Other federal government agencies are currently funding behavioral economics research with implications for low-income populations, including the Departments of Labor, Agriculture, and the Treasury.[26] ACF is now funding research through both OPRE and the Office of Child Support Enforcement.[27]

In addition, academic researchers have made groundbreaking contributions to the literature on the psychology of scarcity — a developing framework in the field of behavioral science.[28] This research suggests that a situation of scarcity, which can include poverty and other forms of scarcity such as limited time, produces characteristic behaviors. For example, individuals may "tunnel" and focus all of their attention on their most pressing concern, such as restoring shut-off utilities, and ignore other issues such as their physical and mental health. Other characteristic behaviors under scarcity include focusing on trade-offs when having one thing means not having something else (for example, purchasing car insurance versus paying a utility bill), becoming expert at calculating best outcomes for the use of limited funds (for example, "the poor...know the value of a dollar, the busy the value of an hour, and dieters the value of a calorie"[29]), and constantly juggling or moving from one pressing task to the next as a result of a failure to plan effectively. These behaviors may be useful in the short term, but can hinder the long-term goal of improving individuals' socioeconomic circumstances.

[23] Larrick, Soll, and Keeney (2015); Rattan, Savani, Chugh, and Dweck (2015); Kaiser and Quintanilla (2014).

[24] These units include The World Bank Global Insights Initiative, Australia's Behavioral Insights Unit, Ontario's Behavioural Insights Unit, The Netherlands' Behavioural Insights Network, Germany's behavioural design team in the Staff of Policy Planning Unit within the Federal Chancellery, France's Secretariat-General for Government Modernisation, and Finland's Government Policy Analysis Unit. See Lourenço, Ciriolo, Almeida, and Troussard (2016).

[25] Exec. Order No. 13707 (Sept. 15, 2015).

[26] See Center for Social Development (2014); Chief Evaluation Office (n.d.); U.S. Department of Agriculture (2010); https://becr.sanford.duke.edu.

[27] See Behavioral Interventions to Advance Self-Sufficiency Next Generation (BIAS NG) project and Behavioral Interventions for Child Support Services (BICS) project at www.mdrc.org.

[28] Mullainathan and Shafir (2013).

[29] Mullainathan and Shafir (2013), p. 93.

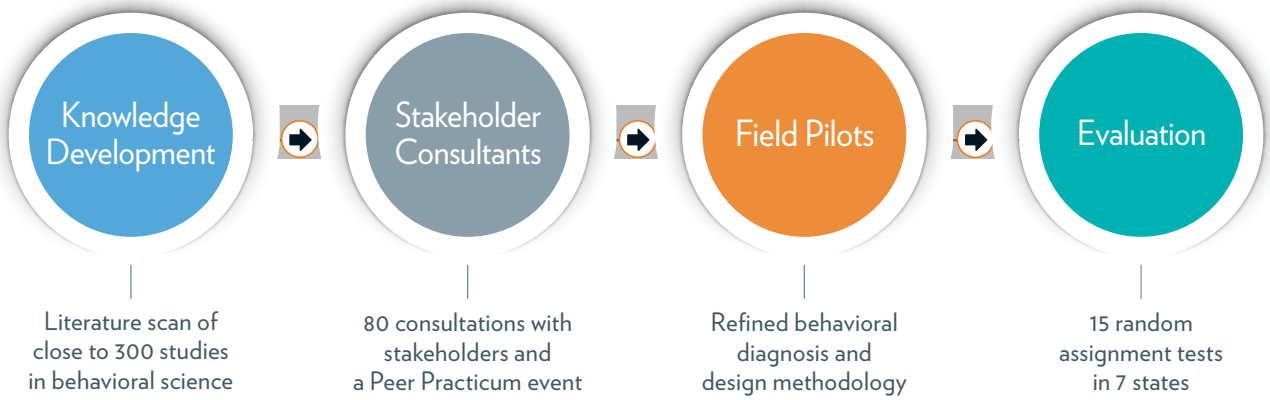
TABLE 1.1 Examples of Behavioral Economics Research and Applications to Policy

Area of Research	Research Example and Findings
CONSUMER FINANCE	A regular text-message reminder to save money increased the percentage of individuals who met their account savings commitments by 3 percentage points. ***Karlan et al., 2016***
HUMAN SERVICES	Redesigned outreach materials increased the percentage of incarcerated parents who owed child support who successfully applied for order modifications by 11 percentage points. ***Farrell et al., 2014***
CRIMINAL JUSTICE	The *Becoming a Man* intervention, designed to discourage automatic thinking among disadvantaged youth, reduced arrests for violent offenses by 3 percentage points. ***Heller et al., forthcoming***
K-12 EDUCATION	Sending weekly text messages to the parents of high school students in a credit recovery program increased the number of students who earned course credit by 7 percentage points. ***Kraft and Rogers, 2015***
HEALTH	Smokers who were offered a savings account in which they could deposit funds that would be forfeited if they failed to quit smoking were 3 percentage points more likely to quit smoking. ***Giné, Karlan, and Zinman, 2010***
ENERGY/ ENVIRONMENT	Doorstep canvassing increased households' recycling participation rates by over 7 percentage points. ***Cotterill et al., 2009***
NUTRITION	When cafeteria workers prompted children by asking them, "Would you like fruit or juice with your lunch?" instead of saying nothing, fruit selection increased by over 16 percentage points. ***Schwartz, 2007***
CHARITABLE GIVING	Offering potential donors public recognition increased their probability of making a contribution by 3 percentage points. ***Karlan and McConnell, 2014***
VOTING	Small changes in wording that framed voting as an expression of identity rather than as simply a behavior increased voter turnout by 11 percentage points. ***Bryan et al., 2011***
MARKETING	Sending individuals a letter reminding them of the punishment for insurance fraud reduced a measure of claim padding by 1 percentage point. ***Blais and Bacher, 2007***
WORKPLACE PRODUCTIVITY	Computer-aided goal setting and feedback increased employee workplace productivity by 10 percentage points. ***Stansfield and Longenecker, 2006***

OVERVIEW OF THE BIAS PROJECT

The BIAS project ran from 2010 to 2016 and included several distinct stages of work, which are illustrated in Figure 1.1. In an early partnership with ideas42, MDRC began the BIAS project with a knowledge development phase that included an extensive review of field experiments on behavioral interventions in eight different domains, as well as carefully planned engagement with researchers, administrators, advocates, and other stakeholders, in order to learn about the most pressing problems in several program areas served by ACF.[30] This early work focused on understanding the potential applications of behavioral science for human services programs. Many of the findings from this work are discussed in the project's first report, *Behavioral Economics and Social Policy: Designing Innovative Solutions for Programs Supported by the Administration for Children and Families*.[31]

FIGURE 1.1 BIAS Project Stages



Building on previous work by ideas42, the BIAS project next developed a systematic approach called "behavioral diagnosis and design" to try to improve program outcomes through the application of insights from behavioral science.[32] In this multistage approach, program administrators and researchers analyze each step in a program's process in order to identify possible drop-off points, or "bottlenecks," where the program is not achieving its desired outcomes. Then, adopting the perspective of the program's participants and staff, the team searches for possible behavioral reasons for the bottlenecks — those related to individuals' decision-making processes and actions — and designs and evaluates behavioral inter-

[30] The eight domains scanned were charitable giving, consumer finance, energy/environment, health, marketing, nutrition, voting, and workplace productivity. As part of this work, the interventions that were implemented in each area were categorized by type and counted in order to characterize the frequency with which a particular intervention was tested both across and within domains. See Richburg-Hayes et al. (2014a) for details.

[31] Richburg-Hayes et al. (2014a). In particular, the report's technical appendix (Richburg-Hayes et al., 2014b) summarizes the scan of the literature, which identified 12 behavioral interventions that had been commonly applied in past research.

[32] ideas42 left the project in early 2013. MDRC led the project's evaluation phase with a subcontractor, MEF Associates, and in consultation with several academic researchers.

ventions intended to address those barriers. In recent years, this process has gained popularity among researchers and practitioners.[33] The approach is described in more detail in Chapter 2 of this report.

A total of 15 agencies participated in the behavioral diagnosis and design process over the life of the project in the following program areas:[34]

- **CHILD CARE.** Federal child care funding supports low-income working families by providing access to affordable, high-quality early care and after-school programs. ACF's Office of Child Care works with states to foster high-quality child care options for families in order to support parents who are working or in school and to prepare children to succeed in their education.
- **CHILD SUPPORT.** Child support encourages parental responsibility so that children receive financial, emotional, and medical support from parents who live in separate households. ACF's Office of Child Support Enforcement partners with state, tribal, and local child support agencies to promote effective child support enforcement tools coupled with family-centered customer service.
- **WORK SUPPORT.** ACF's Office of Family Assistance oversees the Temporary Assistance for Needy Families (TANF) program, which is focused on helping families achieve economic security. States and tribes receive block grants to design and operate programs that provide assistance to needy families and promote job preparation and work. Similarly, a coalition of private and public organizations is implementing and evaluating an earnings supplement program for single tax filers that is intended to provide an incentive to work.[35]

Work in these program areas culminated in 15 randomized controlled trials in seven states that included more than 96,000 sample members. Figure 1.2 shows the geographic distribution of the sites in the project.

REPORT ROADMAP

While the chapters of this report are intended to be read in order, readers who are familiar with the 2014 BIAS report may want to go directly to material that is unique to the current report, beginning with Chapter 3, which summarizes the findings across the 15 experiments.[36]

The content of the remaining chapters in this report is described below:

- Chapter 2 reviews the project's methodology for developing, applying, and evaluating behavioral insights within human services programs.

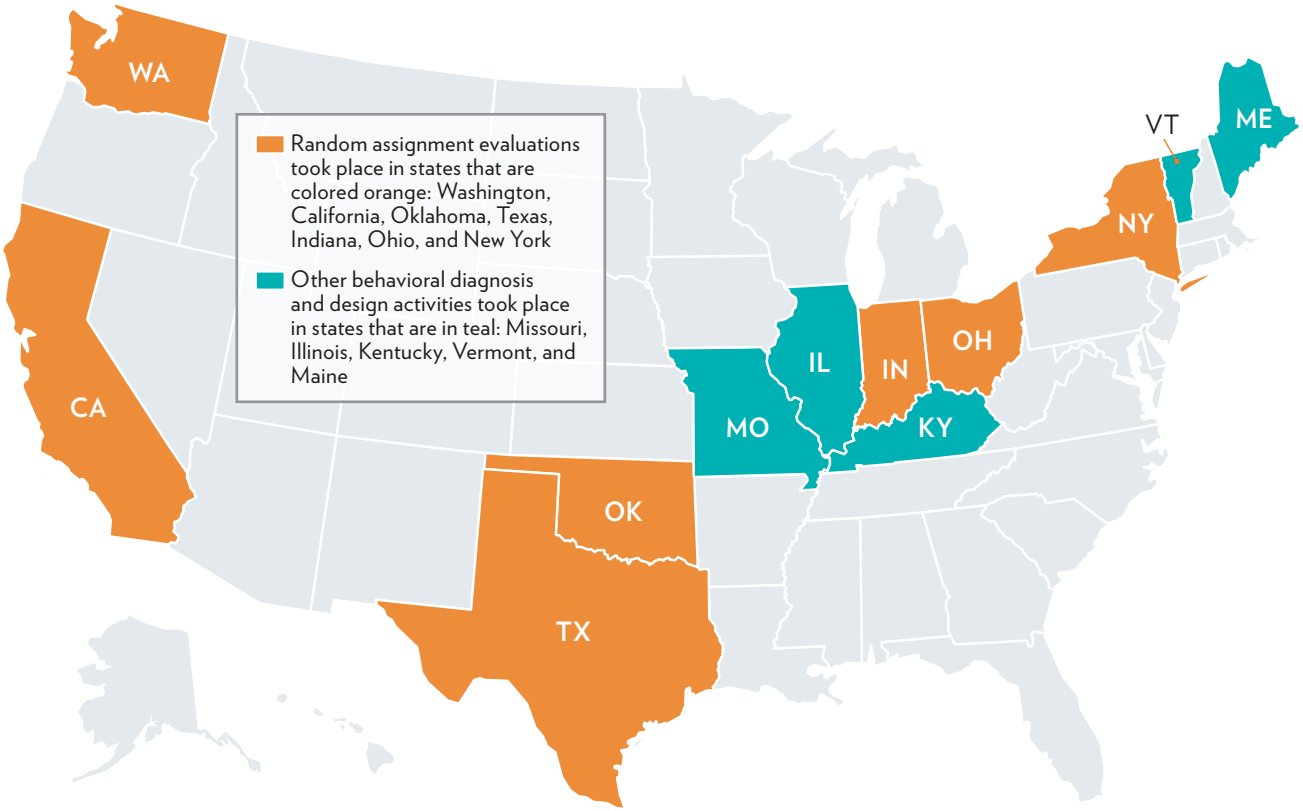
[33] See, for example, Service et al. (2014), World Bank (2015), Beshears and Gino (2015), and Helmer (2015).

[34] The BIAS team also worked with the National Domestic Violence Hotline, which is supported by the Family and Youth Services Bureau of the Administration for Children and Families. This work included behavioral diagnosis and design, but did not culminate in an evaluation of a behavioral intervention.

[35] See Miller, Schultz, and Bernardi (2015).

[36] For the 2014 BIAS report and its supplement, see Richburg-Hayes et al. (2014a, 2014b).

FIGURE 1.2 BIAS Project Sites



- Chapter 3 summarizes field research findings from the BIAS project sites and presents implications for policy and practice from this work.
- Chapter 4 provides a framework — SIMPLER — that encompasses the set of behavioral principles consistently applied across the BIAS tests.
- Chapter 5 shares operational lessons about implementing behavioral science interventions in the context of human services agencies.
- Chapter 6 discusses the relevance of behavioral science to anti-poverty research and policy and provides suggested directions for future research, including the BIAS Next Generation project.

Chapters 2 through 6 are accompanied by independent expert commentaries from behavioral or policy experts (and Chapter 5 has a commentary from a practitioner). Appendix B contains site-specific summaries with additional detail on each site's problem of interest, behavioral design, and findings, along with a link to each site's specific report. The full report on each site can be accessed through the Administration for Children and Families, Office of Planning, Research and Evaluation website, www.acf.hhs.gov/opre, as well as www.mdrc.org.

Expert Commentary

The Time to Incorporate Behavioral Insights Is Now

Sheldon Danziger

President, Russell Sage Foundation, and Distinguished University Professor of Public Policy Emeritus, Gerald R. Ford School of Public Policy, University of Michigan

It has taken much too long for poverty researchers and program analysts to incorporate the insights of behavioral economists into their research and policy designs. Thus, I applaud the collaboration between OPRE and MDRC, which represents the first time that a federal agency has sought to implement behavioral insights into safety net programs.[1]

At least for the last three decades, program rules and procedures have been designed to target benefits to the "truly needy" among the eligible population. As a result, government agencies have "opt-in" rather than "opt-out" rules, detailed reporting requirements, and frequent benefit recertification procedures that discourage some eligible families from receiving benefits. This strategy neglects the research demonstrating that the experience of poverty affects decision making negatively and likely prevents the poor from claiming all the benefits to which they are entitled.[2]

The current system is much more focused on reducing the number of "false positive" cases wherein ineligible individuals receive benefits than it is on reducing the number of "false negative" cases wherein those who *are* eligible fail to receive benefits because, for example, they miss appointments, do not complete paperwork, or cannot meet other administrative requirements. Given current program rules and agency procedures, the BIAS results document that the well-being of the poor could be modestly improved if the kinds of interventions conducted here were implemented on a much broader scale.

However, if we are determined to make greater progress against poverty using the new behavioral insights regarding the effects of scarcity and material hardships on the

[1] A personal reflection — I would prefer a project acronym other than "BIAS" for this work.

[2] Gennetian and Shafir (2015); Mullainathan and Shafir (2013).

decision-making behavior of the poor, we would have to make major changes in safety net program rules and agency practices. Policymakers who seek to reduce the cognitive and administrative burdens now placed on the poor in order to maximize their benefits receipt would have to reject the long-standing assumption that the poor are rational economic actors and embrace behavioral science instead.

This report suggests that such a reorientation is possible. Specifically, the concluding chapter sets out "a framework for moving beyond nudges" that would shift from the BIAS interventions that were designed to get poor individuals to respond more effectively to the current rules toward the design of new system-level interventions that would implement rules that incorporate behavioral insights.

One can imagine, for example, shifting the current reporting burden on recipients of child care subsidies or Supplemental Nutrition Assistance Program benefits (food stamps) to the agencies themselves. Recipients must now report fluctuations in earnings to the agency, which typically requires them to set up an appointment, to miss some work hours, and to bring pay stubs to the agency during hours that it is open. Given modern computer technology, however, an alternative design that incorporates behavioral insights and a concern for false negatives would simply require that agency personnel download the recipients' earnings records from the state employment agency. When fluctuations occur, benefits would be automatically adjusted and the recipient would be notified of the change. In this case, no one is terminated from the rolls for missing an appointment because a child is sick or the bus was late or because a recertification notice went lost in the mail.

As this report demonstrates, we know enough to launch high-intensity interventions that could change the choice architecture of safety net programs to better reflect what we have learned about the decision making of the poor. What we don't know is whether we can muster the political will to make these changes, particularly because behavioral research suggests that the changes are likely to increase program participation and thus increase program costs in an effort to further reduce poverty.

Nudging Change In Human Services

2 The BIAS Project Approach to Applying Behavioral Concepts

This chapter provides a detailed overview of the full process of behavioral diagnosis and design used in the Behavioral Interventions to Advance Self-Sufficiency (BIAS) project. The chapter is geared toward program administrators, frontline staff, and researchers who are considering implementing behavioral interventions and those seeking to replicate the approaches used in BIAS. The chapter begins by detailing the approach used in all BIAS sites. It then delves more deeply into the value of testing, explaining the various experimental designs that are used across the project. A commentary follows by behavioral expert Crystal Hall, Associate Professor of Public Policy and Governance at the University of Washington, and Fellow, Office of Evaluation Sciences.

THE BIAS APPROACH TO PROBLEM SOLVING

The BIAS project designed and implemented random assignment evaluations of behavioral interventions across several human services program areas, as described in Chapter 1 and as listed in Table 2.1.[1] This section briefly describes how the team implemented the behavioral diagnosis and design process with agencies in order to develop solutions to the problems agencies had identified. Figure 2.1 illustrates the full process.

Define: Developing a Clear Description of the Problem

The first step in the process in Figure 2.1 is to identify and discuss the problem that the agency wants to solve.[2] The fourth column of Table 2.1 shows the range of identified problems. For example, in Texas, the problem was the low number of applications for child support order modifications from incarcerated noncustodial parents.[3] A modification application permits parents to request a review of their current child support order, which could result in an adjustment of their monthly payment amount. For incarcerated parents, this review could mean updating their order amount to reflect, for example, a decline in their financial circumstances since the order was last established. One pos-

[1] The BIAS project also worked with a number of agencies to conduct behavioral diagnosis, but the work did not result in testing interventions. See Appendix Table A.1 for a list of these sites by domain.

[2] Many of these steps have been used in other behavioral science applications. See Haynes, Service, Goldacre, and Torgerson (2012) for background on Steps 4 through 12 and Meckstroth et al. (2015) for a discussion of Steps 7 through 10.

[3] Farrell, Anzelone, Cullinan, and Wille (2014).

TABLE 2.1 Summary of BIAS Interventions and Research Design

Domain	Site	Population	Problem	Experimental Research Design	Sample Size
CHILD SUPPORT	Texas	Incarcerated noncustodial parents	Few requests for order modifications	Two-group	1,904
	Washington	Incarcerated noncustodial parents	Few requests for order modifications	Two-group	827
	Franklin County, Ohio	Noncustodial parents (not being sent a reminder notice)	Low payment rates on existing orders	Factorial	15,715
		Noncustodial parents (being sent a reminder notice)	Low payment rates on existing orders	Two-group	10,741
	Cuyahoga County, Ohio	Noncustodial parents (not being sent a reminder notice with no cell phone number on file)	Low payment rates on existing orders	Two-group (iteration)	10,404
		Noncustodial parents (not being sent a reminder notice with a cell phone number on file)	Low payment rates on existing orders	Multi-arm (iteration)	6,322
		Noncustodial parents (being sent a reminder notice)	Low payment rates on existing orders	Two-group (iteration)	9,317
		Noncustodial parents	Low payment rates on new orders	Two-group	1,078
CHILD CARE	Indiana	Families applying for subsidies	Low take-up of quality-rated providers	Multi-arm	12,652
	Marion, Indiana	Families receiving subsidies	Late subsidy renewals requiring multiple visits	Two-group	5,332
			Late subsidy renewals requiring multiple visits	Two-group (iteration)	4,732
	Oklahoma	Families receiving subsidies	Late subsidy renewals	Multi-arm	9,348
WORK SUPPORT	New York, New York (Paycheck Plus)	Low-income, single adults	Low meeting attendance rates	Factorial	2,978
			Low meeting attendance rates	Two-group (iteration)	2,331
	Los Angeles, California	TANF recipients	Low reengagement with TANF	Multi-arm	2,442
				TOTAL:	**96,123**

FIGURE 2.1 Framework for Implementing Behavioral Tests

STEP 1 IDENTIFY site and problems of interest.

DIAGNOSE:

STEP 2 MAP process under consideration.

STEP 3 EXAMINE data to identify bottlenecks.

DESIGN:

STEP 4 DEVELOP two or more policy interventions to compare (e.g., old vs. new policy; variations on a policy).

STEP 5 ASCERTAIN what you want to know (develop research questions that the evaluation will answer).

TEST:

STEP 6 SELECT an evaluation approach (methodology) that will best answer the questions in Step 5.

STEP 7 DETERMINE the outcome that the intervention is intended to influence and how it will be measured in the trial.

STEP 8 ASSESS how many units (people, institutions, or areas) are required for robust results.

STEP 9 ASSIGN each unit to one of the policy interventions, using a robust randomization method, and introduce the policy interventions to the assigned groups.

STEP 10 MEASURE the results and determine the impact of the interventions.

SCALE or ITERATE:

STEP 11 ADAPT the policy to reflect your findings.

STEP 12 ITERATE—**return to Step 2** to continue to improve your understanding of what works.

sible outcome is a lower child support order, resulting in the parent's greater ability to pay and less debt accrual during incarceration.[4] In Oklahoma, the problem of interest was that many parents renewed their child care subsidy *after* the state's deadline.[5] Moving parents toward on-time renewals would help to ensure consistent child care for families, stable payment for child care providers, and a reduced administrative burden for the Oklahoma Department of Human Services.

[4] While incarcerated parents often do not have income, their child support orders can be adjusted upward or downward based on other factors, such as assets. As a result, a slower accrual of debt is not guaranteed.

[5] Mayer, Cullinan, Calmeyer, and Patterson (2015).

The BIAS team worked with each agency to carefully define a problem in terms of the desired outcome, without presuming to know the reason for the problem before conducting a diagnosis. For example, the problem statement, "How can the program make parents realize that enrolling their children in quality-rated child care is important?" has inherent assumptions. The assumption is that parents are unaware of the importance of quality-rated care, implicitly suggesting that more information needs to be provided as a solution. However, there could be other explanations for low enrollment in quality-rated child care. For instance, if parents have financial difficulty covering the cost of care beyond the amount of their child care voucher (as the voucher often does not cover the full cost of care), this circumstance would suggest a solution other than providing more information about the value of quality-rated child care options.

As another example, the problem statement, "How can the program make it easier for parents to choose a quality-rated child care provider?" also presumes a solution. In this case, there is an assumption that parents face "hassle factors" — or barriers to completing an action — in selecting a quality-rated provider, which suggests that an improvement to the process for enrollment is a reasonable solution. While eliminating hassle factors may be a possible solution, this approach would not be likely to work if a very small number of parents experience this hassle factor or if the real reason for low selection is a lack of conveniently located quality-rated providers. Assumptions such as these may make it challenging to design successful interventions if they turn out to be incorrect or true for only a small portion of the target population. It is best to have a problem statement that defines a specific and measurable outcome and does not contain any premature attempt at causal explanations. For example, the problem statement, "How can the program increase the percentage of parents choosing quality-rated care?" is free of assumptions.[6]

In addition, the problems under consideration need to be precise enough that they can be tested: For example, "improving the child support system" is too broad to address with one intervention. In each case, the agency and the BIAS team agreed on a specific, well-defined target area before moving to the next step — diagnosing the causes of that problem.

Diagnose: Identifying Bottlenecks That May Cause the Problem

Conducting a comprehensive investigation into the problem and its potential causes (Steps 2 and 3 in Figure 2.1) was a critical and essential step to designing an intervention. The goal was to understand where bottlenecks, or drop-off points, existed that could be preventing the desired outcomes from occurring, and what could be causing them. Descriptive data provided the team with an understanding of drop-off points within a process. See Box 2.1 for an example of using data in the diagnosis phase.

[6] The BIAS team started with this question for the Indiana project, but the diagnosis effort resulted in a reframing of the problem statement to focus on increasing the number of parents choosing high-quality care during the enrollment period.

BOX 2.1 Using Descriptive Data for Diagnosis

Behavioral diagnosis and design involves reconstructing a process through multiple perspectives, such as those of administrators, frontline staff, and clients. In this way, the method is also able to identify possible "bottlenecks" — points where the process is not working as desired. This process works best when it is accompanied by data to quantify these drop-offs.

For example, the team worked with the National Domestic Violence Hotline (NDVH) on ways to minimize the number of callers to the hotline who hang up before reaching an advocate (an NDVH staffer). NDVH produced periodic reports to the federal government on call volume; however, these reports did not provide information on the distribution of call volume across hours of the day, days of the week, or other periods. As a result, the team worked with NDVH to extract specific data elements from their system. By analyzing data in this way, the team learned that, when a caller was waiting on hold to speak with an advocate, hang-ups peaked about 18 seconds into the caller's wait time and that this period coincided with a silent period in the recorded wait message. The team also learned that the average wait time varied by the day of the week, with the longest wait time occurring on Mondays. While NDVH did not move on to the testing stage, these types of analyses were helpful for managers, as previously unknown patterns were uncovered that had implications for staffing and other important program decisions.*

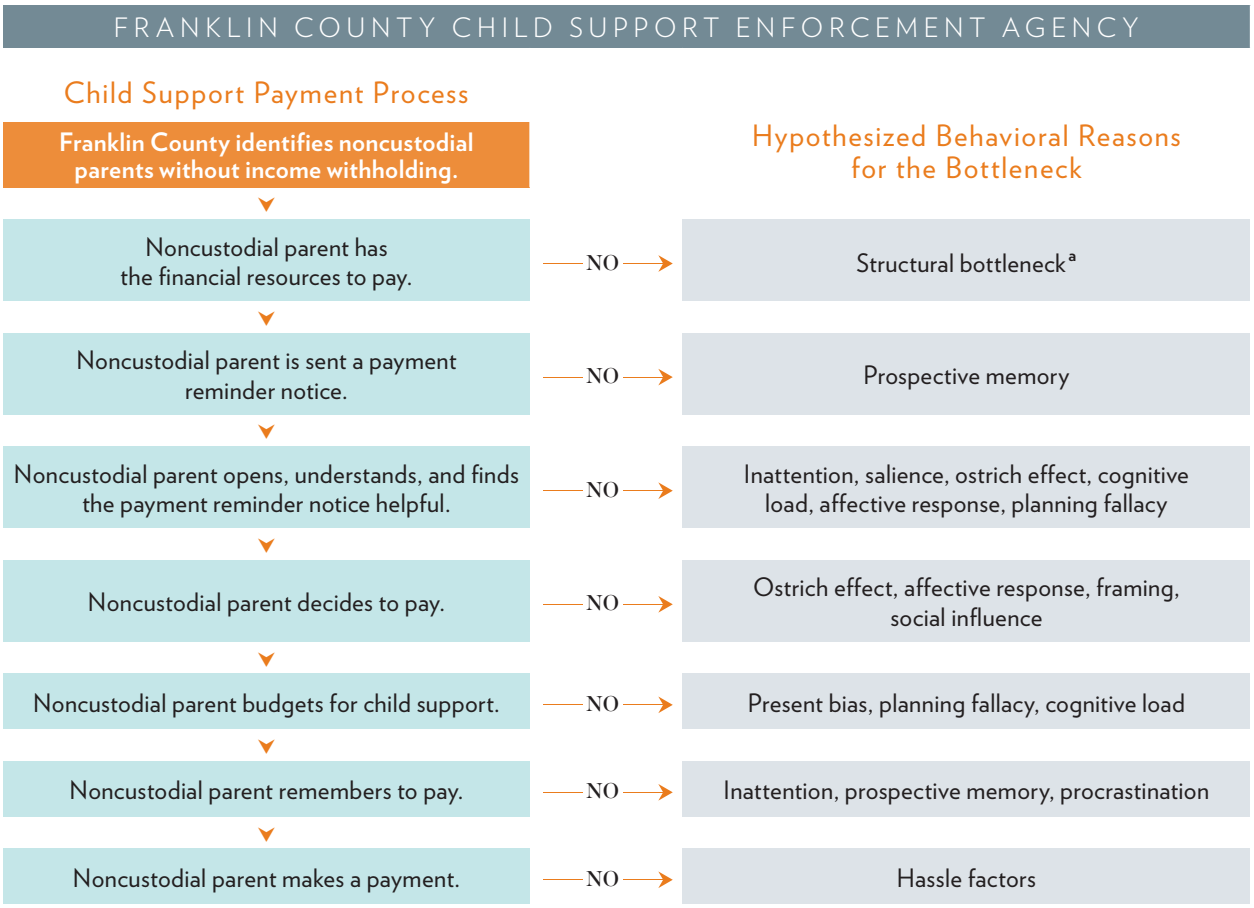
When possible with other agencies, the BIAS team collected hard data with different points of interest identified in the process in order to find drop-offs, as the team had done with NDVH. However, more often than not, the team was not able to secure data representing every point in the process and therefore proceeded with the best information available.†

*NDVH did not move to the testing phase because of a technology disruption that precluded a reliable method of implementing the intervention. See Chapter 5 for details.

†As discussed in more detail in Chapter 5, availability of data was one of the larger challenges in the diagnosis phase.

The BIAS team also used a combination of interviews, meetings, written materials, and direct observations to help identify possible bottlenecks and their associated causes. In each site, the team developed diagnostic questions aimed at identifying causes and detailing the process from multiple viewpoints (such as from participants, administrators, and staff) to ensure that the team fully understood the processes and perspectives. A "behavioral map" synthesizes this work through linking the hypothesized process bottlenecks to behavioral concepts drawn from psychology and other fields. Figure 2.2 provides an example of a behavioral map, showing the six primary reasons for the bottlenecks associated with the child support payment process identified by the BIAS team and staff

FIGURE 2.2 Behavioral Map for Making a Child Support Payment



SOURCE: Figure based on BIAS behavioral diagnosis research with Franklin County Child Support Enforcement Agency staff.

NOTES: This map is a stylized representation of the child support payment process for some noncustodial parents. A noncustodial parent does not necessarily go through all these steps in the displayed order.

[a]Structural bottlenecks are not associated with any behavioral concept and lie outside the scope of the BIAS project, but are included in this behavioral map for illustrative purposes.

from the Franklin County Child Support Enforcement Agency.[7] These bottlenecks do not represent all of the hypothesized factors that were uncovered, but are limited to those identified bottlenecks that are related to potential behavioral reasons for why noncustodial parents who have the ability to pay at least some portion of their order may not be doing so.

Design: Developing an Intervention That Will Overcome Identified Barriers

The BIAS team worked with each agency to determine what could be done to mitigate the barriers identified during diagnosis. As part of Step 4 of the framework presented in Figure 2.1, the team linked each intervention component to at least one specific, hypothesized bottleneck that was identified in the diagnosis phase. This step allowed the team to have a clear theory of change for why the intervention had the potential for an impact.

While many of the problems shown in Table 2.1 may have been caused by similar hypothesized bottlenecks, no one "set" of intervention techniques applied to all situations. Rather, the BIAS team started with the diagnosis process and drew upon lessons from the field of behavioral science to customize interventions to address the hypothesized bottlenecks. This approach allowed the team to implement the intervention components that seemed best suited for the problem and the potential causes at hand. Chapter 4 describes in detail the techniques used to design behavioral interventions in the BIAS project.

Test: The Value of Evaluation in Developing Solutions

The approach used in BIAS contained steps to systematize both the identification of the problem of interest and the development of solutions, but also included steps to verify whether solutions actually improve outcomes, to provide results in a faster manner, and to foster continuous improvement processes.

Testing is important because it is not possible to determine whether a change caused an improvement unless alternative explanations are ruled out. In the absence of a strong evaluation design, it will be unclear whether observed trends following an intervention reflect true effects of the intervention or whether they are caused by some other factor(s). In other cases, it may not be immediately clear which intervention component matters, and testing can help determine which individual components or bundles of components affect the outcome of interest. For example, slight wording changes in correspondence materials may be considered as part of a messaging intervention, but administrators may have little guidance as to which wording will work best. Head-to-head tests of wording variations (one of several components of a messaging intervention) on a small sample can inform the decision, and an evaluation of such alternatives may be a cost-effective way to improve a process before employing the change on a larger scale.

[7] Baird et al. (2015).

In general, testing in BIAS was geared toward answering three types of questions:

1. Does the new intervention work better than the existing process — status quo — in producing the desired outcomes?
2. Which components of the new intervention work best to produce the desired outcomes?
3. Can the intervention be further fine-tuned to improve outcomes?

The first question implies a comparison between a new intervention and the status quo and the second question implies a comparison of two or more variations of components — the focus of Step 6 in Figure 2.1 ("Select an evaluation approach") — while the last question is related to continuous improvement. While there are many types of evaluation methods, BIAS relied on randomized controlled trials (RCTs) — often called the "gold standard" of evaluation.[8] Randomizing a sample of clients who are eligible to receive an intervention (the program group) or to the status quo condition in which they do not receive an intervention (the control group) and examining the difference between outcomes of each group at a later period is the best way to assess the program's effect, or impact.[9] While a two-group design is common, 6 out of 15 BIAS tests contained multiple research groups, as shown in the second-to-last column ("Experimental Research Design") in Table 2.1. In these cases, program group members were randomized to be eligible for slightly different interventions, resulting in several program groups, which allowed the BIAS team to answer more nuanced research questions. (See Box 2.2 on factorial designs.)

VALUE OF THE BIAS APPROACH

Faster Feedback

The BIAS tests primarily measured *proximal* outcomes — which focus on the immediate next steps in a process, such as whether a client submitted forms or went to an appointment. While the outcomes of ultimate interest may be economic self-sufficiency or consistent, on-time payment of child support, improving these proximal outcomes could have an outsized effect on the longer-term outcomes of interest compared with the status quo. To obtain these proximal measures, the team collected data from readily available administrative databases or simple tracking spreadsheets. Focusing on proximal outcomes and leveraging available databases allowed the team to determine quickly whether the changes were making a difference. Such data also permitted the BIAS team to use rapid-cycle evaluation — in other words, develop, implement, and test new interventions quickly to increase the likelihood of improving outcomes of interest.

[8] Shadish, Cook, and Campbell (2001).

[9] Weiss, Bloom, and Brock (2013).

BOX 2.2 Factorial Designs: Which Components Work Best?

One criticism of RCTs is that they are a "black box." That is, a simple random assignment design will tell whether a bundle of components performs better or worse than another bundle or the status quo, but it will not explain why. Often qualitative methods accompany RCTs to provide some insights into the "why" question, but RCTs that are more refined can also answer these types of questions by examining the effect of individual components to determine whether they work better separately or in combination. Factorial random assignment designs are an example of this type of approach. A factorial design contains research groups that are defined by a number of possible combinations of two or more components (called factors) at two or more levels. Levels can represent whether a component is included or excluded (which would be two levels) or several different dosages (frequency and intensity) or timings of the component (resulting in multiple levels).

For example, to complement ongoing efforts to improve child support collections, the Franklin County Child Support Enforcement Agency (FCCSEA) was interested in trying innovative methods to encourage payments among noncustodial parents. The BIAS team, in collaboration with FCCSEA, tested a low-cost payment reminder intervention for parents whose income was not automatically withheld for child support payments and who were not receiving payment reminder notices. The intervention consisted of three components at two levels or more:

- Provision of a reminder notice to the program group
- Timeframe for the reminder notice (mid-month or late in the month)
- Provision of an automated phone call, or robocall to the program group

The team wanted to know which components of the intervention affected both the number of payments and the amount of those payments. While a full factorial design would permit examination of all the combinations of the levels of each component as a separate intervention (for example, with two levels for each component and three components, eight unique combinations are possible), the study in Franklin County used a partial factorial design, as there was limited interest in studying certain combinations.

There are three main benefits of factorial designs: (1) they require fewer participants; (2) they allow testing of combinations of treatments more easily; and (3) they allow testing of interactions among factors (which determines whether effects vary by levels of another factor).*

*Shadish, Cook, and Campbell (2002), p. 264.

Continuous Process Improvement

Rapid iteration can foster continuous improvement, and this approach was feasible in two instances (the New York City Paycheck Plus and Indiana child care interventions).[10] For these sites, the BIAS team either quickly implemented another round of behavioral diagnosis and design or used information from the earlier diagnosis phase to try to improve impacts over those obtained in the first round of interventions, again using an RCT to test the new interventions. Using information from the earlier diagnosis phase to improve outcomes among the program group members who do not respond to the first intervention is similar to adaptive intervention designs, which are interventions that change over the period of study according to an individual's outcomes in earlier rounds.[11] Altering the intensity and type of intervention over time at critical decision points may be needed if an individual or group is not responding sufficiently to the initial intervention.[12]

For example, the BIAS team implemented another round of randomization in the Paycheck Plus project based on levels of response in the first round. The goal of the Paycheck Plus project was to encourage clients to come to an optional informational meeting to learn what they needed to do to qualify for a new earnings supplement that is similar to the federal Earned Income Tax Credit (EITC).[13] In the first intervention, clients were randomly assigned to one of four groups (as shown in Figure 2.3). The first critical decision point occurred several weeks after the start of the intervention, when early participation outcomes were examined. While behavioral postcards and texts increased meeting participation rates for some clients, others did not respond. The team quickly used knowledge from the earlier diagnosis phase to hypothesize the types of additional barriers that might have been preventing these clients from attending the meeting. In the second intervention round, all clients who did not respond initially were sent multiple forms of outreach using all communication channels for which the participant had provided contact information and consent — mail, e-mail, text, and robocalls. In addition, half of the clients were randomly assigned to be eligible for an option to attend the meeting by phone. The team hypothesized that the option to meet by phone would result in more clients obtaining the information than if they had to attend in person. The

[10] For the Paycheck Plus findings, see Dechausay, Anzelone, and Reardon (2015). For the Indiana findings, see Dechausay and Anzelone (2016).

[11] Lei et al. (2012).

[12] The general idea behind adaptive interventions is that individuals differ in their response to interventions, so to be effective, interventions should be individualized and adapted repeatedly over time. These types of interventions are more common in public health and medicine.

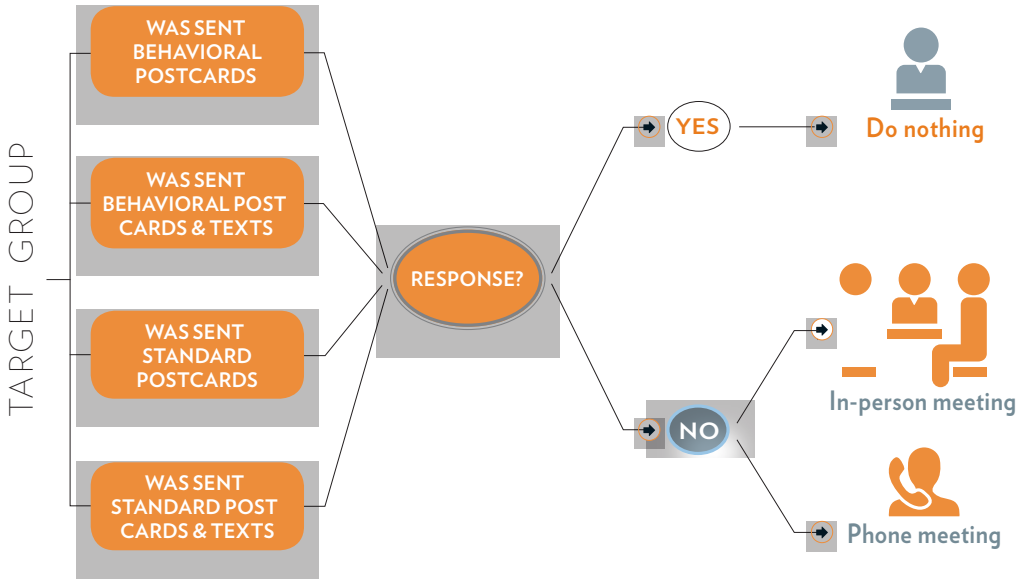
[13] Paycheck Plus is a pilot EITC-like earnings supplement that is being offered to a select group of low-income single adults in New York City. Clients who are eligible for the program can receive a cash incentive if they work and file their taxes. In order to be effective, the program must make sure that potential participants clearly understand what they need to do in order to qualify for the incentive, and the informational meeting was intended to provide that information.

option to meet by phone represented a significant process change that had implications for staffing and other resource allocations, and it was worth testing to determine whether the additional resources would result in better outcomes.[14]

Figure 2.3 illustrates the four key elements of this design approach:

1. **A SEQUENCE OF CRITICAL DECISIONS.** The design shows what is provided first, and if unsuccessful, what is provided next. In Paycheck Plus, there were two critical decision points: first, when deciding the initial BIAS treatment conditions; and second, when deciding how to improve the outcome of attending the informational meeting.[15] At this point, the team needed to decide whether the impacts were satisfactory or whether another intervention was needed to improve attendance rates.

FIGURE 2.3 Design of the Paycheck Plus Sequential Randomization



[14] While it may seem reasonable to expect the phone meeting to improve meeting participation rates, the findings show no difference in outcomes between the two processes. While the clients who were eligible for the phone meeting responded at higher rates initially, this effect diminished as the deadline to have the meeting approached.

[15] The BIAS team had not planned initially to do a second round of intervention testing, but developed the second intervention later after being unsatisfied with the proportion attending a meeting resulting from the first round. As a result, the illustration shows what was *done*, not what was *initially planned*. Thus, the approach that was followed represents sequential randomization, in which a sample is randomized again at key points. The BIAS team could have pre-identified the set of interventions to be enacted at each decision point. If that had been done, the design would have been a sequential multiple assignment randomized trial (SMART). See Lei et al. (2012).

2. **INDICATORS OF WHETHER THE DESIRED OUTCOMES ARE BEING OBTAINED.**[16] An early indication of nonresponse is used to determine whether the intervention should be altered. In the Paycheck Plus example, the participation rate at the meeting within five weeks of the intervention's start was used to determine whether an additional approach was needed. Such indicator variables can be any measure or contextual information that may suggest an undesirable trajectory.

3. **A SET OF INTERVENTION OPTIONS AT EACH DECISION POINT.** At the first decision point, the options were a behaviorally informed postcard or a behaviorally informed postcard and text message or standard versions of the postcard and text message. At the second decision point, the mode of delivery was changed.

4. **A SEQUENCE OF DECISION RULES, ONE PER CRITICAL DECISION POINT.** The decision rules link the early indicator variable to the specific intervention outcomes. In Figure 2.3, this is illustrated through the "Response" oval and the connection to the next steps. If there is no response to the initial intervention, then the clients are randomly assigned to either a phone meeting or an in-person meeting.

CONCLUSION

The systematic approach in BIAS was intended to provide the best opportunity for developing solutions that would result in meaningful impacts on the outcomes of interest. This approach accounts for the specific context and avoids jumping prematurely to intervention ideas without fully understanding the causes of hypothesized bottlenecks.[17] The approach also provides a clear theory of change — a logical, step-by-step explanation of the path from the hypothesized bottleneck to the possible solution. In this way, the bundled solutions that define the intervention have a better chance of improving outcomes, as the individual components are likely to address specific bottlenecks.

Testing is a particularly important phase in the behavioral diagnosis and design process. For behavioral interventions to be most useful in improving programs and fostering a climate of continuous improvement, experimental design must occur alongside the development of interventions. In this way, the experiment can provide answers to the questions of interest. A good evaluation design limits the need for complex analyses, so it is worthwhile to invest the time and effort in this endeavor early. For example, an evaluation design may be able to explore more fully the reasons an intervention works (or fails to work) by leveraging factorial designs to test combinations of interventions that could potentially be replicated. Multisite evaluations can also be used creatively to draw

[16] These indicator variables are also referred to as "tailoring" variables. See Lei et al. (2012).

[17] For example, Goldstein, Cialdini, and Griskevicius (2008); Service et al. (2014); and Alcott and Mullainathan (2010) recommend accounting for context and employing social science research in the design of behavioral interventions.

lessons about effectiveness of interventions in different settings. Rapid-cycle iteration is a way to efficiently leverage evaluation resources to test improvements to interventions, while also fostering continuous process improvement.[18]

As the field of applied behavioral science matures and calls for more intensive behavioral interventions grow, clever evaluation design may be able to save resources, delivering more for less.[19] For example, factorial tests are able to evaluate many intervention components at once, while requiring smaller sample sizes than a series of two-group randomized designs. Sequential randomization can use the same sample to test iterative improvements. Finally, a sequential multiple assignment randomized trial (SMART) can be a strategic way to minimize resources, by deliberately sequencing interventions such that low-cost interventions are tested first on a large sample, reserving higher-intensity (and potentially higher-cost) interventions for nonrespondents.

[18] While it may be best for agencies to work with an experienced evaluator, in a resource-constrained environment administrators may be able to work with universities or individual professors and their graduate students to design and evaluate programs following the framework provided in this chapter.

[19] For examples of calls for more intensive behavioral interventions that move beyond nudges, see the Expert Commentaries following this chapter, Chapter 4, and Chapter 6.

Expert Commentary

Extending Behavioral Diagnosis and Design

Crystal Hall

Associate Professor, Public Policy and Governance, University of Washington, and Fellow, Office of Evaluation Sciences

Project researchers engaged diligently in the process of problem definition and behavioral diagnosis before designing each BIAS intervention. This process is neither quick nor easy, but these steps are crucial prerequisites for an effective study design. More important, a rigorous practice of the diagnosis method could inform the generalizability and scalability of different intervention components studied in a particular context.

Yet there are tradeoffs to be considered when deciding when to engage in a full diagnosis and design process. In an ideal situation, diagnosis and design would be a seamless stage of the research process. Striving to understand the mechanics of a program or service from the perspective of the intended client may seem obvious, but it is often overlooked by researchers, front-line workers, or advocates. This lapse can cause inaccurate assumptions about the constraints and motivations of a subpopulation and ultimately lead to ineffective program design. The process of behavioral diagnosis and design is an excellent way to avoid such an outcome. As noted in this chapter, this process is more powerful when coupled with insights gained from administrative data.

On the other hand, diagnosis and design can be time- and labor-intensive. Furthermore, it can be difficult to disentangle the relative impacts of various types of behavioral bottlenecks. If a client appears to be flustered by a complex form, avoids making a decision because of countless options, and feels that a process is unfair, it could be hard to tell which techniques to use. It can also be difficult to know what specific bottlenecks are exhibiting the greatest influence on the observed behavior.

Moving forward, I offer three suggestions as researchers and practitioners continue to expand the lessons learned from applied behavioral science and the technique of behavioral

diagnosis and design. First, the process of diagnosis and design could be used more extensively as a tool to consider the scale and generalizability of interventions. When coupled with good administrative data, there is great potential to make educated comparisons from one context to another. For example, comparing the application to a benefits process in one state with that of a similar state could be more effective when using this process. Considering questions of scalability during the diagnosis process could also help determine the prioritization of scarce time and resources to explore various research questions.

Second, it could be powerful to shift the focus of behavioral diagnosis and design to the environment encountered by the staff that implement programs and interact with clients. In most cases, the process of diagnosis and design focuses on the client perspective — with good reason. However, designing an intervention for staff could have several benefits. This type of intervention could be easier to implement, in some cases, when training and subsequent tracking of behavior are easier. In addition, one intervention that touches a single case worker who interacts with dozens of clients could have a relatively large impact, under the right circumstances. There are concerns to be considered with respect to the rigor and statistical power of this type of design, but it is nonetheless compelling to consider — especially in the realm of the social policies and programs in the BIAS portfolio.

Finally, researchers and practitioners should work harder to integrate the use of administrative data in the process of behavioral diagnosis and design. As this chapter explains, data can play an invaluable role in this process, and there is still untapped potential in the way that data can be leveraged in the process of intervention design. The role of data will be even more useful to consider as researchers and practitioners work to address questions and behaviors that span government agencies and different decision domains.

The rigorous process of behavioral diagnosis and design should not be overlooked when assessing the broader contributions of the BIAS project. The lessons learned from this technique should continue to evolve and grow, so that we can most effectively leverage the tools offered by behavioral science.

Nudging Change In Human Services

3 The BIAS Project: Results and Implications

This chapter provides an overview of the findings from the Behavioral Interventions to Advance Self-Sufficiency (BIAS) project. It summarizes the results of the 15 tests launched under the project, by program area. The chapter concludes by translating the impacts into practical "takeaways." A commentary by labor economist Lawrence Katz, Elisabeth Allison Professor of Economics at Harvard University and Research Associate at the National Bureau of Economic Research, follows the chapter.

FINDINGS BY DOMAIN

All BIAS sites saw a significant impact on at least one primary outcome of interest. This finding means that the behavioral interventions largely achieved their goals, leading to changes that mitigated the agency's problem of interest. The magnitude of the improvement typically ranged from 2 to 4 percentage points, but was higher in four of the eight sites.[1] The interventions were inexpensive — an important feature in BIAS — with costs ranging from $0.15 per person in Franklin County to $10.46 per client in Washington.[2]

This chapter summarizes the findings from the various BIAS tests by program area. Appendix B contains site-specific summaries with additional detail on each site's problem of interest, behavioral design, and findings, along with a link to each site's specific report.[3]

Child Support

In child support programs, parents must often make complicated decisions with little information in a context where emotions can run high. Such situations can affect both the quality and speed of decision making. Behavioral science can ameliorate some of the impact that such environments might have on decision making, while also providing a new way of thinking about questions that child support staff often confront, such as: Why do parents fail to attend order establishment hearings (where a child support amount can be set), or forget to bring paperwork that would help with the calculation of an accurate child support order? Why do noncustodial parents who have fallen on hard times fail to contact

[1] The BIAS project collaborated with eight sites to implement 15 randomized controlled trials. The impacts ranged from 0 to 32 percentage points. All but four tests were statistically significant at conventional levels — that is, 1 percent, 5 percent, or 10 percent.

[2] Baird et al. (2015); Glosser, Cullinan, and Obara (2016).

[3] The full report on each site can be accessed through the Administration for Children and Families, Office of Planning, Research and Evaluation website, www.acf.hhs.gov/programs/opre, as well as www.mdrc.org.

the child support office to apply for an order modification for which they may be entitled, or fail to access employment referral services?

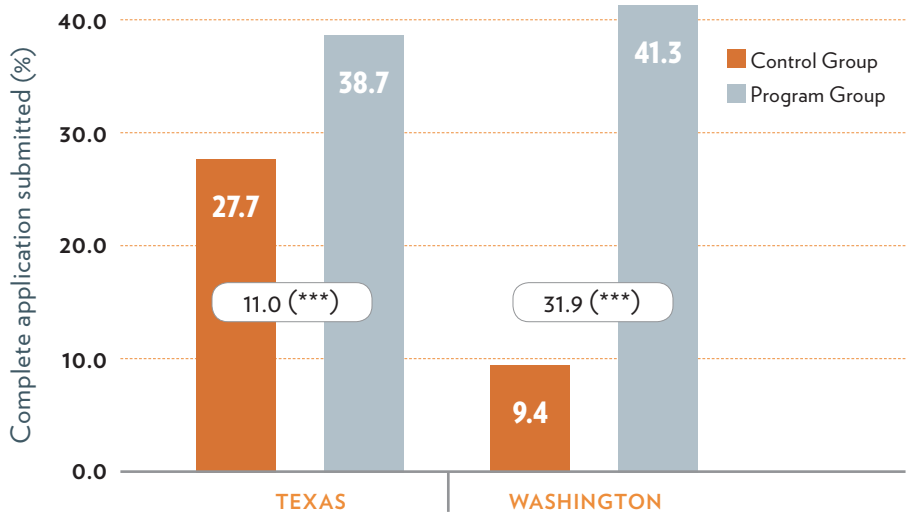
Eight of the fifteen tests launched under BIAS were in the child support domain, focusing on two issues: order modifications and payments.

Problem Focus 1: Order Modifications

When parents with child support orders are incarcerated, they often have a limited ability to make payments, which may lead to a high accumulation of debt. The BIAS sites in Texas and Washington focused on encouraging these parents to submit a modification application to lower their child support order amounts while incarcerated.

TEXAS. The BIAS team built upon an existing outreach campaign in Texas, redesigning the outreach materials to include a new letter informing parents of the opportunity to apply for an order modification, an application prepopulated with information that the state had on file, and two new postcards — one sent prior to the new letter and another sent following the letter to those who had not responded. As shown in Figure 3.1, this approach increased the number of incarcerated parents who submitted a complete modification application by 11 percentage points (from 28 percent for those receiving the existing outreach materials to 39 percent for those receiving the redesigned materials). It was not possible to determine whether the longer-term outcome — increases in the number of child support modifications granted — was achieved, because of the limited timeframe of the study.[4]

FIGURE 3.1 Child Support Order Modification Outcomes, by Site



SOURCE: MDRC calculations using agency data.

NOTES: A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted for noncustodial parent baseline characteristics.

[4] Farrell, Anzelone, Cullinan, and Wille (2014).

WASHINGTON. Washington had little to no existing standardized outreach to incarcerated noncustodial parents. The BIAS team created a new outreach approach that informed parents about the option to apply for a modification. The packet provided guidance on how to complete the application, and the team sent electronic reminders through a proprietary system similar to e-mail.[5] This outreach increased the percentage of parents who submitted a modification application by 32 percentage points (from 9 percent for those initiating the process largely on their own to 41 percent for the group receiving the BIAS materials). Most important, the systematic outreach with materials using behavioral science insights increased the number of modifications that were granted by 16 percentage points (from 2 percent to 18 percent).[6]

Interventions at these two sites led to some of the largest impacts in the BIAS project. At the same time, the findings demonstrate that behavioral "nudges" similar to those used for these interventions may have a ceiling on what they can achieve. For example, the majority of parents (about 60 percent in both states) did not submit an application for a modification, even after receiving behaviorally informed intervention materials. Various barriers could explain this high rate of nonresponse. For one, the release date was so far in the future for some incarcerated parents that they may not have considered planning for release, even with behavioral prompts. Because of requirements to include certain language in materials that were shared with clients who were engaged in legal proceedings, these documents could have been difficult to understand. Additionally, the context of a secure facility imposes constraints on addressing bottlenecks; parents in secure facilities are not able to easily obtain information about prior earnings or access to a notary or to postage, all of which are needed to apply. These and other limitations have prompted some states, like California, to enact laws that automatically suspend child support orders if the parent will be incarcerated for more than three months, likely resulting in substantially greater percentages of incarcerated parents with reduced orders.[7]

Problem Focus 2: Collections

Some parents who owe child support do not make their monthly payments, decreasing the financial support that the child and the custodial parent receive, and leading to debt for the noncustodial parent. Federal child support regulations require that parents who are employed have their payments automatically deducted from their paychecks through income withholding; in all states, this method yields the majority of collections.[8] However, some parents who owe child support are not working, are self-employed, or are not in the formal labor market and, therefore, do not have payments automatically deducted from their paycheck. Those parents need to proactively submit a payment each month. The BIAS team aimed to improve payment rates among these parents in two Ohio counties.

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[5] The Washington State Department of Corrections contracts with JPAY — a private company that offers an array of communications and financial services to jails and prisons across the country — to provide electronic messaging services to individuals incarcerated in the state's prisons. The interface is similar to email, allowing prisoners to send and receive messages. However, it costs money for messages to be sent; "e-stamps" cost between $0.17 and $0.33 depending on how many are purchased at one time. There is no cost to read messages.

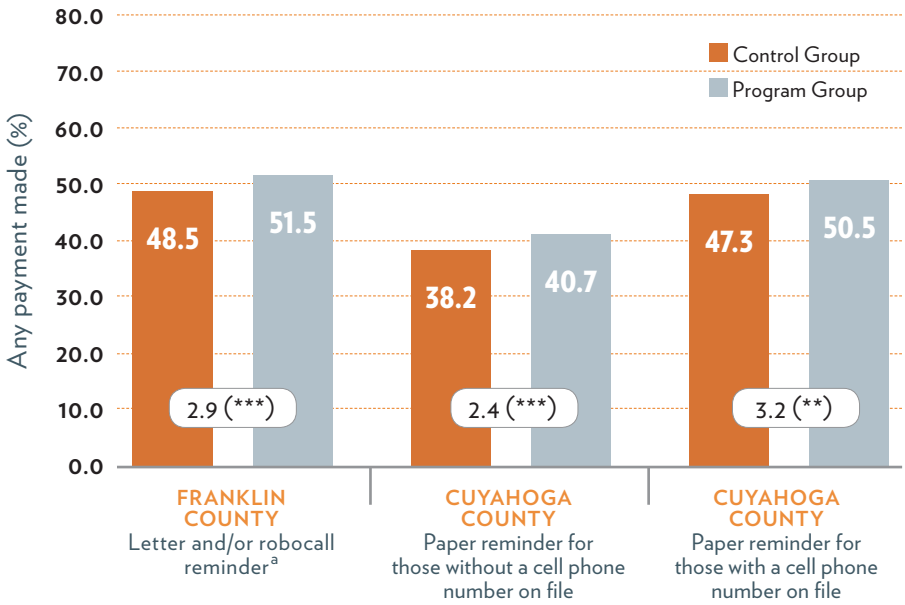
[6] Glosser, Cullinan, and Obara (2016).

[7] Office of Child Support Enforcement (2014); Cal. Fam. Code §4007.5 (2011).

[8] Based on calculations using Table P-29 from Office of Child Support Enforcement (2016b).

FRANKLIN COUNTY, OHIO. In Franklin County, the project focused on two subsets of such parents: those who *were not* being sent a payment reminder notice (Group 1) and those who *were* being sent a payment reminder notice produced by the state (Group 2). Sending parents in Group 1 a letter or robocall reminder that their payment was due led to a 3 percentage point increase in the number of parents who made at least one child support payment within four months (from 49 percent to 52 percent, as shown in Figure 3.2). However, for parents who were already being sent a payment reminder notice produced by the state (Group 2), making behaviorally informed changes to the design of the payment reminder notice did not make them more likely to make payments (not shown in Figure 3.2).[9]

FIGURE 3.2 Child Support Payment Outcomes, by Site



SOURCE: MDRC calculations using agency data.

NOTES: A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted for noncustodial parent baseline characteristics.

The Franklin County test is among parents not currently being sent a notice. The study involved a factorial design involving five intervention groups and one control group. The above findings show the combined outcome for the combined intervention groups. See Baird et al. (2015). The Cuyahoga study involved three distinct tests; the findings from the first and second tests are depicted in the figure. The first paper reminder test targeted parents without cell phone information in their file. The second test targeted parents with cell phone information in their file and evaluated the separate effectiveness of paper reminders (the last set of bars above) and text messages (findings not shown in the figure). See Baird, Cullinan, Landers, and Reardon (2016) for details.

[a]Impact shown is combined across program groups: letter only, robocall only, or both.

[9] Baird et al. (2015).

CUYAHOGA COUNTY, OHIO. After reviewing the findings from Franklin County, additional child support collection tests were implemented in Cuyahoga County, Ohio, to evaluate whether new interventions would improve collections.[10] As in Franklin County, the BIAS team aimed to improve payment rates among parents who owed child support and did not have payments automatically deducted through income withholding. For parents who were not being sent any payment reminder notices but did not have a cell phone number listed in their files, sending a behaviorally informed paper notice increased the likelihood of payment by 2 percentage points. For parents with a cell phone, the study evaluated separately the benefits of using text messages or sending a behaviorally designed paper notice. The paper notice was found to increase payments by 3 percentage points and the text messages were equally as effective as the paper reminders. As in Group 2 in Franklin County, redesigning the notice for parents who were already receiving a payment reminder produced by the state did not increase the likelihood of payment.

The sizes of the improvement, or impact, for several tests of reminders in the two counties were similar, as shown in Figure 3.2. The findings suggest that for some parents who simply forgot to make payments, reminders could be an effective and low-cost support. On the other hand, reminders may not be effective in increasing payments when parents do not have the resources, because reminders do nothing to alter their ability to pay.

The BIAS team also tested a strategy to improve initial payments on newly established child support orders in Cuyahoga County. Early after the establishment of an order, Cuyahoga County estimates that it takes four to six weeks for an income withholding order to be processed, which often results in a two- to three-month delay before payments are deducted from a noncustodial parent's paycheck for the first time. During that time, parents are expected to pay manually, but in 2014, only 37 percent of cases with new orders made a payment in the first two months of the order.[11] The BIAS team hypothesized that parents might not be aware of their responsibility to pay manually. The team evaluated the impact of mailing a redesigned welcome letter that explained how to make payments, along with payment reminder notices. However, these solutions did not increase the parents' likelihood of payment in the first few months of their order (not shown in Figure 3.2).[12]

Together, the child support findings suggest that encouraging people to follow through on one-time behavior that is largely in their interest may be easier than changing their habits or perspectives about completing an action. Changing habits likely requires a more intensive intervention or a series of nudges at different points in the system over an extended period of time. This program area also has the very real limitation of the parent's ability to pay. People who do not have the means to pay child support cannot respond to encouragement to pay with even the most ingenious behavioral intervention.

[10] Baird, Cullinan, Landers, and Reardon (2016).

[11] Correspondence with the Cuyahoga County Office of Child Support Services (June 19, 2015).

[12] The sample sizes in this study were not large enough to detect very small differences of magnitudes like those detectable in the other Ohio tests.

Child Care

The federal Child Care and Development Fund (CCDF) supports low-income working families by providing access to early care.[13] It is the largest child care subsidy program for low-income families in the United States, with the bulk of CCDF funding used to provide child care subsidies to low-income parents who are working or in school.[14] Like many other human services programs, offices that are responsible for administering CCDF often require clients to make active decisions and follow a series of steps in order to obtain benefits. These actions include deciding to apply, completing forms and proving eligibility, and, in the case of child care vouchers, selecting a child care provider who accepts the voucher and payment rate and has available openings at hours that work for the parent. Once parents receive their vouchers, they may be required to recertify eligibility several times within each calendar year to maintain benefits after their initial application.[15] Failure to complete the process in a timely manner may result in interruption of child care services or accrual of debt owed to child care providers. On-time renewals, therefore, may contribute toward consistent child care for families, stable payments for providers, and reduced administrative burden for the state.

The child care tests represent 4 of the 15 tests launched under BIAS. They focused on two points in the CCDF process: when parents are applying for the program and when they must renew their eligibility.[16]

Problem Focus 1: Provider Choice

Parents using a child care voucher must also make a decision about which child care provider to use. Some states have a quality rating and improvement system (QRIS), which is designed, in part, to provide parents with a standard rating of child care quality. Since participating providers must meet a minimum standard of quality, knowing the ratings may be helpful to parents in selecting a provider.[17] Administrators in Indiana were interested in increasing the number of parents who used their CCDF subsidies to pay for highly rated providers participating in the state's QRIS.

INDIANA. The BIAS team replaced a letter and brochure about Indiana's QRIS that is typically sent to parents on the CCDF waiting list with a redesigned packet that included individualized child care referrals based on distance from the parent's home. Some parents also received a proactive phone call from the state's child care resource and referral agency. The interventions did not increase the overall percentage of CCDF families who chose any QRIS provider, although being sent a referral and

[13] Office of Child Care (2015).

[14] Lynch (2014).

[15] Recent changes to the Child Care and Development Block Grant (CCDBG) Act have modified some of the program's requirements since the time the research team launched tests in this area. The new CCDBG Act extends the period of eligibility to at least 12 months and directs states to ensure that their procedures do not unduly disrupt parents' employment. These provisions aim to make the process more efficient. See Office of Child Care (2015).

[16] For ease of exposition, the term "parent" is used throughout this section, though the child is the beneficiary of the subsidy.

[17] Tout et al. (2010).

receiving a phone call did increase the percentage of families who chose the highest-rated providers by 2 percentage points (from close to 13 percent to 15 percent).[18]

The impact was slightly larger for parents who received the intervention close to the time they signed up for the CCDF waiting list, suggesting that timing may play a role in behavioral interventions related to child care decision making. Parents who had been on the waiting list longer at the time they received the intervention were not influenced by the additional information, possibly because they had already selected a provider. More generally, this intervention's results reinforce the notion of the complexity of child care decision making and the difficulty of making proactive referrals, since parents' preferences about child care are hard to anticipate and provider vacancies change regularly.[19]

Problem Focus 2: Subsidy Renewal

In order for families to retain their child care subsidy, states require parents to periodically document their continued eligibility for it. CCDF administrators in Indiana and Oklahoma were interested in improving their respective renewal processes.

MARION COUNTY, INDIANA. In Indiana, simplifying the explanation of requirements, highlighting deadlines, and sending appointment reminders increased the percentage of parents who attended their first scheduled renewal appointment by 3 percentage points (from 50 percent to 53 percent), and increased the percentage of parents who completed the process in one appointment by 3 percentage points. However, the intervention did not change the likelihood that parents renewed by the deadline. A second round of testing focused on providing parents with detailed information about how to show that they were meeting their work requirement, in addition to providing a personalized reminder. This effort increased the percentage of parents who attended their first scheduled appointment by 11 percentage points (from 44 percent to 55 percent). It did not change the likelihood that parents completed redetermination in one appointment, but it did increase the percentage of parents who renewed on time by 3 percentage points (from 76 percent to 79 percent).

OKLAHOMA. In Oklahoma, a strategy that enlisted child care providers to remind parents that their renewal deadline was approaching was most effective at helping parents complete the process on time, resulting in a 2 percentage point increase in on-time renewals.[20] An intervention that included only outreach to parents and did not enlist the help of the providers did not appear to improve on-time renewal, but it may have helped clients renew during a 30-day grace period following the renewal deadline.

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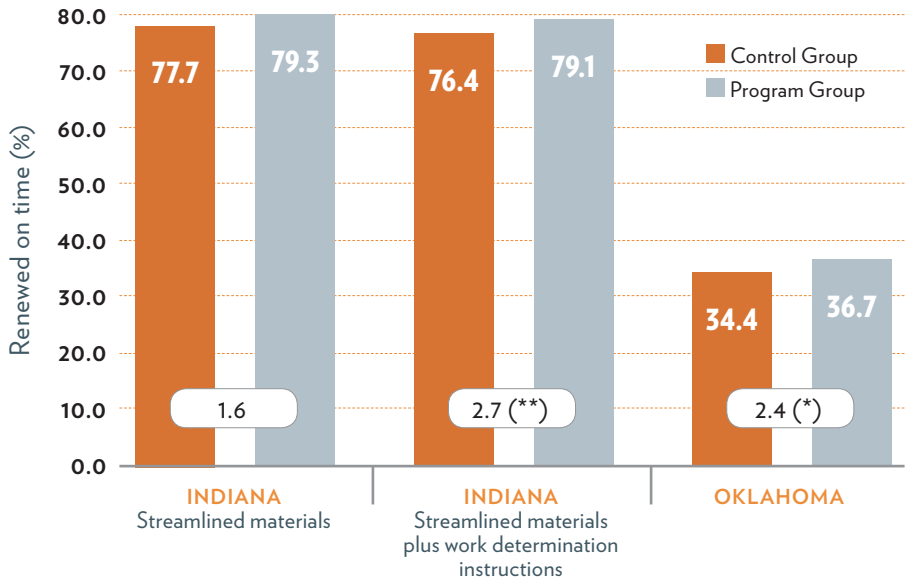
[18] Several outcomes were examined, many of which did not show improvements. However, there is some evidence that under certain conditions (specifically, receiving materials when first assigned to a waiting list) can affect the decision to use a high-quality-rated provider. See Dechausay and Anzelone (2016).

[19] Forry et al. (2013).

[20] Mayer, Cullinan, Calmeyer, and Patterson (2015). Oklahoma has a 30-day grace period after the deadline during which parents are still able to renew their voucher. The intervention did not have any effect on renewal rates after benefits closure but before the end of the grace period.

Selected findings from the Indiana and Oklahoma studies are shown in Figure 3.3. These interventions improved the renewal rates, and the findings suggest that reminders and deadlines are two key mechanisms to keep parents on track to renew. The results also suggest that providing personal assistance can improve outcomes for low-income parents. In both Oklahoma and the Indiana QRIS study, interventions in which the clients interacted with a staff person, by phone or in person, had larger impacts than those without this personal interaction. In line with other behavioral science findings, providing personal assistance at the right point in time may be one way to ensure that parents understand their options and have the knowledge to make the decision that is best for their family.[21]

FIGURE 3.3 Child Care On-Time Renewal Outcomes, by Site



SOURCE: MDRC calculations using agency data.

NOTES: A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

The second test in Indiana represents a rapid-cycle iteration of the prior test, adding a behavioral solution to simplify the work determination instructions for the BIAS group. This corresponds to Round 2 in the Indiana report. See Dechausay and Anzelone (2016).

The percentages reported for the Oklahoma test represent an intervention targeted at child care providers to encourage them to help their clients renew their child care benefits on time.

[21] For examples of studies employing personalization, see Garner (2005) and Bettinger, Long, Oreopoulos, and Sanbonmatsu (2012).

Work Support

One of the primary goals of Temporary Assistance for Needy Families (TANF) is to increase the economic security of each participant's family through employment. This goal also characterizes other income support programs, such as the federal Earned Income Tax Credit (EITC), which provides an incentive to work by offering a relatively large credit to low-income workers. However, challenges arise when participants do not engage with the TANF program or understand the EITC requirements, making the goals of work support programs difficult to reach. This research area generated the remaining 3 of the 15 tests launched under the BIAS project.

Problem Focus 1: Engaging Families in the Welfare-to-Work Program

Many human services programs require engagement to maintain eligibility, though the activities vary by agency. Failure to engage with required activities or services could result in sanctioning or other penalties.

LOS ANGELES, CALIFORNIA. The BIAS team worked with the Los Angeles County Department of Public Social Services (DPSS) to increase the number of TANF recipients who reengaged in the county's welfare-to-work program.[22] Some TANF recipients with young children in Los Angeles had been exempt from participating in the welfare-to-work program, but lost this exemption in 2013 as a result of a change in state policy. DPSS began scheduling appointments with formerly exempt parents to bring them into the welfare-to-work program and either engage them in program activities or obtain documentation for a continued exemption. Clients who did not respond to program messages about reengagement could be sanctioned or have their benefits terminated.

The BIAS team created an additional notice to send to clients about this state policy change and the need to attend a reengagement appointment. The team hypothesized that mailing a simplified, salient notice to participants would increase the number who attended the appointment. The notice also included a personalized sticky note from the case manager to invoke a sense of reciprocity. The behavioral outreach increased the number of clients who took action promptly by 4 percentage points, as shown in the first set of bars in Figure 3.4, though the effects did not continue past 30 days.[23]

The team also split the notices in half and varied whether they emphasized the benefits clients would gain by attending the reengagement appointment or the losses they might incur by failing to do so. The "loss messages" were not more punitive than the "gain messages" — the dollar amounts were the same in both conditions; the only difference was the way the amount was framed in messaging. The loss notice, when compared with the control group outreach, increased positive engagement at 30 days by 4 percentage points. The gain notice, when compared with the control group outreach, did not produce a statistically significant impact at 30 days. The Los Angeles findings suggest

[22] Farrell, Smith, Reardon, and Obara (2016).

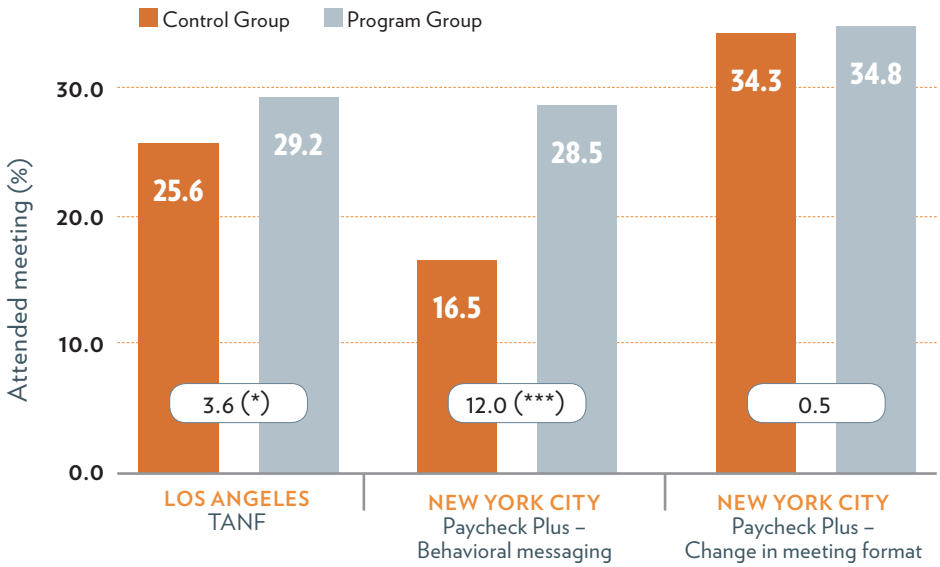
[23] If clients in either condition failed to attend the initial reengagement meeting, county staff began pursuing other avenues to engage them, including sending noncompliance letters and conducting home visits. At this point, the earlier communications may not have resonated with participants, when the other outreach attempts gained traction.

that participants may respond more to the prospect of losing benefits than the promise of receiving benefits, in alignment with previous behavioral economics research on loss aversion.[24]

Problem Focus 2: Attendance at an Informational Meeting

Paycheck Plus is a pilot EITC-like earnings supplement program that is being offered to a select group of low-income single adults in New York City and Atlanta.[25] Clients who are eligible for the program can receive a cash incentive if they work and file their taxes. In order for the program to motivate individuals to work, participants must understand clearly the actions they need to complete in order to qualify for the incentive.

FIGURE 3.4 Work Support Program Engagement Outcomes, by Site



SOURCE: MDRC calculations using agency data.

NOTES: A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted for pre-random assignment characteristics of sample members.

The Los Angeles data reflect the percentage of TANF recipients who positively reengaged in the welfare-to-work program by attending a scheduled reengagement appointment, or providing evidence qualifying them for a different exemption or for referral to specialized services. See Farrell, Smith, Reardon, and Obara (2016).

Figure shows the results for the first test in New York from combining behavioral postcards and behavioral text messages (the highest-intensity outreach) compared with standard postcards.

The second test in New York represents a rapid-cycle iteration of the prior test, changing the meeting format to permit phone calls for the BIAS group. This corresponds to Round 2 in the Paycheck Plus report. See Dechausay, Anzelone, and Reardon (2015).

[24] Tversky and Kahneman (1991); Hossain and List (2012).

[25] Miller, Schultz, and Bernardi (2015).

NEW YORK CITY, NEW YORK. Since eligible clients enrolled in the program about a year before they could receive their first bonus payment, program operators invited them to an interim meeting to remind them of the program's benefits, review participation requirements, and encourage participants to find work or to continue working if they were already employed. Clients were offered a $50 incentive for attending.

The BIAS team designed materials to increase the number of clients who attended the informational meeting.[26] Clients received either postcards alone or both postcards and text messages that encouraged them to make a detailed plan to attend the meeting.[27] These materials emphasized the pending deadline, the risk of missing the bonus payment, and the opportunity to learn more about the program. Figure 3.4 shows that clients who received the highest-intensity outreach (behavioral messaging through postcards and text messages, in the Paycheck Plus test in New York City) were 12 percentage points more likely to attend the meeting compared with those who received the control condition postcards that did not include the plan-making components (29 percent and 17 percent, respectively).

In an attempt to build on the initial response, the BIAS team launched a second round of outreach with clients who did not attend a meeting during the first round. In this round, all individuals received behaviorally informed outreach, but some were offered the option to complete the meeting by phone instead of in person. Program operators were interested in whether delivering the meeting by phone would be as effective as an in-person interaction, and whether this new option would increase meeting participation rates — timely questions as more service providers consider changing the way they communicate with their clients in light of new messaging channels. Those in the group who were offered telephone meetings responded to the marketing materials faster than those in the group who were required to attend in person, but this effect diminished as the deadline approached. In the end, there was no statistically significant difference in response rates between the phone and in-person research groups, as shown in the third pair of bars in Figure 3.4.

The tests of income support demonstrate that behavioral techniques such as implementation prompts, prominent deadlines, and reminders can help economically vulnerable adults engage in program-related meetings. Further, the Paycheck Plus results demonstrate the importance of incorporating evaluation into program design changes. It was surprising to find that converting an in-person meeting into a phone meeting, which can be viewed as a change that would make

[26] Dechausay, Anzelone, and Reardon (2015).

[27] While participants received postcards alone or postcards and text messages (a variation in the mode of delivery), the intervention also varied whether the materials incorporated concepts from behavioral economics (the "behavioral" version) or did not incorporate behavioral concepts (the "standard" version). As a result, the intervention consisted of four groups: standard postcards, behavioral postcards, standard postcards and text messages, behavioral postcards and text messages. More details on the design are presented in Chapter 2 and shown in Figure 2.3.

it easier for participants to follow through on the task of attending the meeting, did not increase the meeting participation rate. This counterintuitive result suggests that simplification may not always be a solution; applying a different set of behavioral tools may also be needed to encourage people to follow through on a plan, even if that plan is to do something seemingly easier, such as initiating a phone meeting.

All of the income support studies focused on encouraging participants to attend a meeting. In both cases, the meeting was an interim step to achieving something that was generally in participants' long-term interest (for example, obtaining a tax credit or not losing benefits). However, in the short term, an individual may have difficulty prioritizing attendance at such a meeting. This possibility highlights people's tendency to be biased toward the present — prioritizing the needs of today over the needs of tomorrow. The findings demonstrate that nudges can make people act in a more timely fashion, but may not always influence the bottom line of how many people respond over time.

CONCLUSION

All of the BIAS sites produced positive, statistically significant impacts on at least one major outcome of interest, and the magnitude of the findings is in line with those reported in the literature.[28] Generally, impacts of the magnitude of the well-known 401(k) default savings intervention are very rare. In that intervention, participation in a particular retirement plan was the default option, and it resulted in increasing participation rates from about 37 percent to 85 percent, for a 49 percentage point difference.[29] Yet the smaller impacts of behavioral interventions that do "work" do not mean that these solutions should be viewed as too modest to be considered successful. While most of these impacts are small to moderate, they are often notable given their low cost and relatively low effort.

The BIAS findings also suggest some potential challenges to implementing behavioral interventions in human services programs. First, despite the applicability of an intervention, legal or procedural difficulties may hamper implementation. For example, while implementing a default procedure to automatically suspend child support payments upon incarceration may be the most effective mechanism to increase modifications of child support orders, this intervention was not possible in Texas and Washington. In those states, as in many others, child support orders remain in effect until the incarcerated noncustodial parent or the custodial parent initiates a request for a modification. A judge makes the final determination about whether an order should

[28] While no single summary of the impacts from applied behavioral interventions is available, a meta-analysis of framing effects reports a "modest" (based on the classification in Cohen, 1977) effect size of 0.309, on average (see Kühberger, 1998). The corresponding BIAS effect sizes range from 0.05 to 0.78. Researchers are in the planning stages for a meta-analysis of experiments of loss aversion and near- and long-term discounting in decision making; see Camerer and Imai (2016).

[29] Madrian and Shea (2001).

be adjusted, and some judges hold the view that because imprisonment is the result of a criminal act, incarceration and the loss of income are voluntary and should not be considered in modifying orders.[30] Chapter 5 provides more detail about the operational lessons learned in the BIAS project.

Second, behavioral interventions alone, like those implemented in BIAS, may not be of the right intensity for the problem at hand. For example, a noncustodial parent's limited ability to pay may be best addressed through interventions that improve employment prospects and earnings potential. That said, these more traditional interventions can theoretically be enhanced by combining them with behavioral interventions. Given that most proposed solutions to the problems faced by social programs involve traditional economic responses, behavioral interventions may be a useful supplemental tool to address the same problem from a different but complementary angle. Several illustrative examples are provided in Chapter 6.

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 at a relatively low cost. Significant progress is evident through these results but also through human services agencies' willingness to embrace the behavioral diagnosis and design process as well as a culture of continuous improvement to advance their programs. If more government programs embraced this culture of experimentation, it could contribute to the overall performance of some agencies.

[30] At the time of the study in 2014, states that permitted the reduction of support orders for incarcerated parents included 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. See Office of Child Support Enforcement (2012a, 2012b). Since the time of the study, federal rules have changed. See new child support guidelines in Office of Child Support Enforcement (2016a).

Expert Commentary

Intervention Timing and Treatment Effects Matter

Lawrence Katz

Elisabeth Allison Professor of Economics, Harvard University, and Research Associate, National Bureau of Economic Research

The BIAS team has done a remarkable job in a short period of designing and implementing 15 tests of low-cost behavioral interventions to improve the efficacy of key U.S. poverty alleviation policies using rigorous randomized controlled trials (RCTs). I found several of the results of the behavioral interventions to be striking. The first is the larger impacts of outreach and reminders for inducing one-time applications for child support order modifications among incarcerated noncustodial parents (that appear to be clearly in their interest) than for reminders trying to increase actual child support payments by those parents. It seems that behavioral nudges, reminders, or information are not going to be sufficient to have large impacts on compliance when individuals don't have the financial resources to comply or don't view the required payments to be "legitimate."

The second striking result is the importance of timing in behavioral information interventions that try to improve the active choices of program participants. In the child care provider choice intervention test for Indiana, an information intervention early in the process (before parents had already decided about child care providers) appears to have larger impacts in improving the selection of higher quality-rated providers. In contrast, late information interventions seem to have limited impacts in other settings such as housing and neighborhood choices for Housing Choice Voucher recipients.[1] The same issues are likely important in school choice systems where simplified and personalized presentation of information about choices can have substantial impacts, but only when provided before choices are close to finalized.[2] And a third notable finding observed in the Los Angeles study that attempted to increase engagement in welfare-to-work activities is the power of messages that focus on loss as opposed to gain in exerting an impact on behavior. As the BIAS team notes, a sizable amount of evidence supports such approaches for prospect theory and loss aversion in earlier work in behavioral economics.[3]

[1] Schwartz, Mihaly, and Gala (2016).

[2] Hastings and Weinstein (2008).

[3] DellaVigna (2009).

The results from the BIAS project behavioral interventions raise several key questions for future work. The first is the extent to which behavioral nudges that increase program take-up or engagement also eventually improve important long-run outcomes such as child well-being and economic self-sufficiency of parents. Behavioral interventions with large impacts on program participation (such as the Texas and Washington interventions) to apply for child support order modifications could (for reasonable sample sizes) serve as first stages to learn about longer-run impacts on ultimate outcomes. Earlier behavioral interventions to help individuals apply for student financial aid for college by completing the Free Application for Federal Student Aid form have generated large enough impacts to analyze effects on actual college going and persistence.[4] Behavioral nudges with small (even if detectable) impacts on program participation are unlikely to be powerful enough to estimate impacts on economic and socioeconomic outcomes of ultimate interest.

A second key question is who are the "compliers" (marginal participants) who respond to the behavioral nudges but would not participate in the absence of such interventions? Are the marginal participants more disadvantaged than typical participants in the control groups? The behavioral view is that the most disadvantaged (and most needy) individuals face substantial "bandwidth" costs to dealing with complex program rules and compliance ("paperwork") requirements. Behavioral interventions that help reduce these costs could expand participation on the margin for needier individuals.[5] The traditional view of neoclassical economics has been that hassle factors lead to beneficial self-selection, with the neediest individuals having the greatest incentive to bear such costs and the less needy finding it not worth the effort and time.[6] An examination of the characteristics of the marginal compliers and the extent to which they are more or less advantaged and seem to make decisions by weighing the costs against the benefits in the 15 BIAS interventions could illuminate this debate.

A final issue for further research is how to combine low-cost behavioral nudges or information interventions as an initial approach to increase program compliance and then to move to more high-intensity efforts (for example, such as personal counseling assistance) for remaining eligible individuals who don't respond to the nudges. In other words, information interventions can help sort out those not needing more resource-intensive help to participate and engage in social programs.[7]

[4] Bettinger, Long, Oreopoulos, and Sanbonmatsu (2012).

[5] Bertrand, Mullainathan, and Shafir (2004).

[6] Nichols and Zeckhauser (1982); Kleven and Kopczuk (2011).

[7] An approach similar to this one is taken in the Paycheck Plus project described in Chapters 2 and 3.

Nudging Change In Human Services

4 Developing SIMPLER Solutions

The SIMPLER framework describes the behavioral principles applied across the Behavioral Interventions to Advance Self-Sufficiency (BIAS) tests. Each intervention was created independently while adhering to the behavioral diagnosis and design approach, but a retrospective look across the tests identifies common bottlenecks in BIAS program areas that various human services settings may share and, as a result, commonalities across interventions. SIMPLER was developed as part of this report to summarize several key behavioral concepts, discussed below, that may be relevant to other human services programs. Commentaries accompany this chapter by Philip Oreopoulos, Professor of Economics and Public Policy at the University of Toronto, Research Associate at the National Bureau of Economic Research, and Research Fellow at the Canadian Institute for Advanced Research; Dilip Soman, Professor and Corus Chair in Communication Strategy at the Rotman School of Management, University of Toronto, and Co-Director of Behavioural Economics in Action at Rotman, University of Toronto; and Sim B. Sitkin, Michael W. Krzyzewski University Professor and Director, Behavioral Science and Policy Center at Duke University, and Cofounder, Behavioral Science and Policy Association.

BEHAVIORAL TECHNIQUES USED IN BIAS

Each local agency has a distinct set of rules and procedures, particularly across program areas, which required a detailed look at the site's operations.[1] Examining each agency led to highly tailored interventions that were specific to each site's problem and context, and ensured that the message of interest was accurately and effectively delivered to clients. However, the BIAS team did incorporate a consistent set of behavioral design principles into almost all of the interventions tested, even though implementation varied at each site. For example, most agencies required participants to complete lengthy forms in order to receive benefits. In many instances, existing language was difficult to comprehend, especially by those with low reading levels, yet agencies believed this language was required for legal reasons. The SIMPLER framework — as defined in Table 4.1 — illustrates how the BIAS team was able to create behavioral interventions to address bottlenecks such as the completion of complex forms within the constraints of the system. Nonetheless, this framework is only a guide based on the experience of BIAS, and is not meant to encompass the full range of available behavioral techniques.[2]

[1] Operational lessons are discussed in more detail in Chapter 5 of this report.

[2] The SIMPLER framework incorporates many of the most common interventions cataloged through the BIAS project's review of field experiments, which tested behavioral interventions in eight areas. It corresponds to reminders, social influence, feedback, channel and hassle factors, identity cue and identity priming, social proof, automation, and loss aversion. As discussed in Chapter 5, some of the common interventions — such as defaults — were difficult to implement, as such interventions would often have required legislative change. Other common interventions, such as microincentives, were not operational in the human services programs that were involved in the project. See Appendix Table A.2 for a short description of each of these interventions and Richburg-Hayes et al. (2014b) for a more detailed description of each and examples of how the intervention has been applied.

TABLE 4.1 Behavioral Techniques Used in BIAS

S	I	M	P	L	E	R
Social Influence	Implementation Prompt	Making Deadlines	Personalization	Loss Aversion	Ease	Reminder
DEFINITIONS						
The way people perceive themselves in relation to others. Certain identities can be primed based on the desired behavior.	Bridges intention with action. When people feel they have made progress toward their goals, they are more committed to achieving those goals.	Frames a future action as important and urgent, discouraging the tendency to prioritize today's needs over tomorrow's needs.	Encouraging a particular behavior through, for example, a handwritten note or personal assistance, like helping someone complete a form.	Preference for avoiding losses over acquiring gains. Incentives or language can be framed to capitalize on this concept.	Making processes automatic through, for example, defaults, simplification, removing hassles, and color coding.	Prompts to encourage the completion of an action, often in the form of a text message or a postcard.
EXAMPLES						
Texas mailed to incarcerated parents who owed child support a postcard that included the line, "Other parents have had courts lower their child support."	Indiana prompted parents to develop specific plans to make it to their CCDF renewal appointment on time, with the proper documents.	Paycheck Plus advertised an artificially early deadline to attend a meeting, knowing that people who missed the first due date would have time to catch up before the real deadline.	Oklahoma mailed lists of clients due for renewal to child care staff members and asked providers to communicate with parents to assist them with renewing their CCDF voucher.	Los Angeles designed two notices, one emphasizing benefits to attending an appointment, and the other emphasizing losses they might incur by not attending.	Washington made the child support modification process easier by mailing materials to parents before they even asked that included a tip sheet specifying which questions in the application had to be answered.	Ohio sent a monthly reminder through mail, robocall, or text message to parents who owed child support but were not getting any other monthly invoice to remind them to pay.

Table 4.2 provides an overview of impacts on main outcomes, by domain, to make it easier to connect the behavioral concepts to the study's findings.

Social Influence

Social influence is a broad concept that refers to direct or indirect persuasion by society, peers, or a person of influence, which can have an impact on people's decisions and actions.[3] This powerful tool can have large effects on behavior: It can change someone's mind about a decision already reached

[3] In this report, social influence is a broad term meant to include social proof (where people assume the actions of others in an attempt to reflect correct behavior for a given situation) and social persuasion (a deliberate attempt on the part of one party to influence the attitudes or behavior of another). Across the BIAS project's scan of 291 studies, social influence was the second-highest ranked concept studied in field experiments, as shown in Appendix Table A.2.

TABLE 4.2 Summary of BIAS Findings, by Domain

Each test used a customized behavioral intervention for a desired outcome.		While effects were usually modest...					... they are meaningful due to their scalability...	... and low cost.
Problem of Interest	State	Intervention Results					Sample Size	Estimated Intervention Cost
		BIAS group (%)	–	Status quo (%)	=	Impact	= 1,000 people	Per person/ month
CHILD SUPPORT								
Increase order modification requests by incarcerated noncustodial parents	Texas	38.7	–	27.7	=	11.0***		$1.73
	Washington	41.3	–	9.4	=	31.9***		$10.46
Increase payment rates on existing child support orders	Ohio, Franklin County[a]	51.5	–	48.5	=	2.9***		$2.53
	Ohio, Franklin County[b]	57.2	–	57.9	=	-0.8		$0.15
	Ohio, Cuyahoga County[c]	40.7	–	38.2	=	2.4***		$3.25
	Ohio, Cuyahoga County[d]	50.5	–	47.3	=	3.2**		$3.25
	Ohio, Cuyahoga County[e]	36.4	–	35.7	=	0.6		$0.40
	Ohio, Cuyahoga County[f]	54.8	–	52.5	=	2.3		$0.50
CHILD CARE								
Increase take-up of quality-rated providers	Indiana	14.7	–	12.6	=	2.1*		$1.40
Increase attendance at first scheduled renewal appointment	Indiana[g]	52.6	–	50.0	=	2.6*		$1.93
	Indiana[h]	54.7	–	44.1	=	10.6***		$2.79
Increase on-time subsidy renewals	Oklahoma[i]	36.7	–	34.4	=	2.4*		$1.10
WORK SUPPORT								
Increase meeting attendance for tax credit program	New York[j]	28.5	–	16.5	=	12.0***		$1.75
	New York[k]	34.8	–	34.3	=	0.5		$1.30
Increase engagement in Temporary Assistance for Needy Families	California	29.2	–	25.6	=	3.6*		$1.79

continued

SOURCE: MDRC calculations using agency data.

NOTES: Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

[a] This test was targeted to noncustodial parents not currently being sent a notice of payment due from the state. Given that the Franklin County study involved a factorial design involving five intervention groups and one control group, the findings show the outcome for the combined intervention groups. This corresponds to Test 1 in the site report (Baird et al., 2015). The highest cost of the various intervention arms is shown. The average cost across all arms is lower.

[b] This test was targeted to noncustodial parents currently being sent a notice of payment due from the state. The test measures the efficacy of the behaviorally informed reminder notice over the version used by the state.

[c] This test evaluated a paper reminder for those without cell phone numbers on file. The Cuyahoga study involved three distinct tests; the findings from the first test are depicted in the table.

[d] This test evaluated the use of paper reminders for those with cell phones on file. This corresponds to the second test in the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

[e] The findings are from a test of behaviorally redesigned payment reminders sent to parents to whom a notice was already being sent. This intervention corresponds to the third test in the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

[f] The findings show the impact of a new welcome letter for parents with new child support orders — the fourth test of the Cuyahoga study (Baird, Cullinan, Landers, and Reardon, 2016).

[g] This test evaluated streamlined materials versus the agency's recertification materials. This corresponds to Round 1 in the Indiana report (Dechausay and Anzelone, 2016).

[h] This test represents a rapid-cycle iteration of the prior test, adding a behavioral solution to simplify the work determination instructions for the BIAS group. This corresponds to Round 2 in the Indiana report (Dechausay and Anzelone, 2016).

[i] The figures reported for this test represent an intervention targeted at child care providers to encourage them to help their clients renew their child care benefit on time.

[j] This test represents a study of behavioral postcards and behavioral text messages through a factorial design. The row entry compares the highest-intensity outreach — combined behavioral postcards and behavioral text messages — with standard postcards. This corresponds to Round 1 in the Paycheck Plus report (Dechausay, Anzelone, and Reardon, 2015).

[k] This test represents a rapid-cycle iteration of the prior test, changing the meeting format to permit phone calls for the BIAS group. This corresponds to Round 2 in the Paycheck Plus report (Dechausay, Anzelone, and Reardon, 2015).

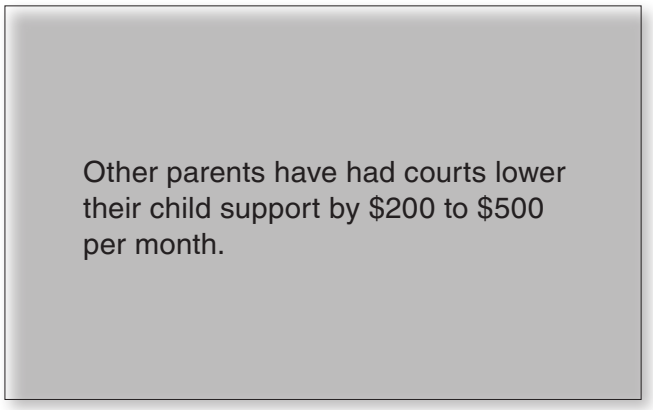
or motivate a person to follow through on a plan that is already in place. In one study, homeowners received mailers that compared their electricity consumption with that of neighbors and rated their household as great, good, or below average. This intervention led to a reduction in power consumption equivalent to what would have happened if energy prices had been raised in the range of 11 percent to 20 percent.[4]

During diagnosis, the BIAS team heard that clients considered their peers' advice and opinions when making their decisions. As described in Table 4.1, the BIAS team employed social influence in the Texas study.[5] The state sent a postcard to incarcerated parents who were eligible for a child support modification that included the tagline shown in Figure 4.1. This strategy may have been effective in convincing parents that a modification was possible for them.

[4] Allcott (2011).

[5] Farrell, Anzelone, Cullinan, and Wille (2014).

FIGURE 4.1 Social Influence: Excerpt of Postcard Sent to Program Group in Texas Site



In the case of Indiana, parents reported that they often relied on their family and friends for child care recommendations.[6] Parents' preference for relying on family and friends to make child care choices may have been so pervasive that it was not always possible to make communication from the state agency more salient. Policymakers and practitioners should consider using interventions that try to harness social influence for positive outcomes more extensively.

Implementation Prompts

Plan-making devices like implementation prompts — which encourage people to map out the precise steps they will take in order to complete a task — are meaningful strategies to move people to action. In a study conducted in 2011, employees were sent mailings that listed when and where they could receive a flu vaccine. Those who received a specific prompt to write down both a date and a time when they planned to go were more likely to obtain the vaccination.[7] These tools help people capitalize on their intended plan in subtle but meaningful ways. As a rule of thumb, it rarely hurts to lay out the steps a person needs to complete in a clear and concise format, making the task seem more feasible.

The BIAS team used implementation prompts to encourage Paycheck Plus participants to attend an informational meeting and to help parents in Indiana make it to their Child Care and Development Fund (CCDF) renewal appointment on time with proper documentation. (See Figure 4.2.)

While it may seem trivial to encourage participants to plan all of the seemingly minute steps that are involved in completing an action, the BIAS results support past academic research and indicate that this strategy has a meaningful effect. BIAS implementation prompts included questions like: *How will you get to your appointment?* The particular questions in the prompt were tailored to the specific action.

[6] Dechausay and Anzelone (2016).

[7] Milkman et al. (2011).

FIGURE 4.2 Implementation Prompt: Excerpt of Postcard Sent to Program Group in Indiana Site

Your CCDF appointment is on:

XX/XX/XXXX
Unless you rescheduled recently

Child Care Center Address

Remember to bring:

- ☐ **Proof of Address**
  The postmarked envelope this postcard came in will work.
- ☐ **Proof of ID**
  For example: a driver's license
- ☐ **Provider Information Page**
  Filled out by your provider
- ☐ **Proof of Work or School**
  Tip: bring more pay stubs than you think you need!
- ☐ **Proof of Other Income**
  For example: UI, SSI, TANF letter
- ☐ **Your swipe card**

Questions?
Call 1 (XXX) XXX-XXXX — *remember to leave a name and number* — or email XXXX@childrensbureau.org

Making Deadlines

Behavioral science has demonstrated that people, by nature, procrastinate. For example, in one study, when students were given set deadlines throughout the semester to hand in their assignments, they performed better than those students who just had to hand in all of their assignments by the end of the semester.[8]

BIAS findings have pointed to the idea that deadlines may activate a particular sense of urgency and can be especially powerful at calling people to action. The Paycheck Plus findings provide an example.[9]

[8] Ariely and Wertenbroch (2002).

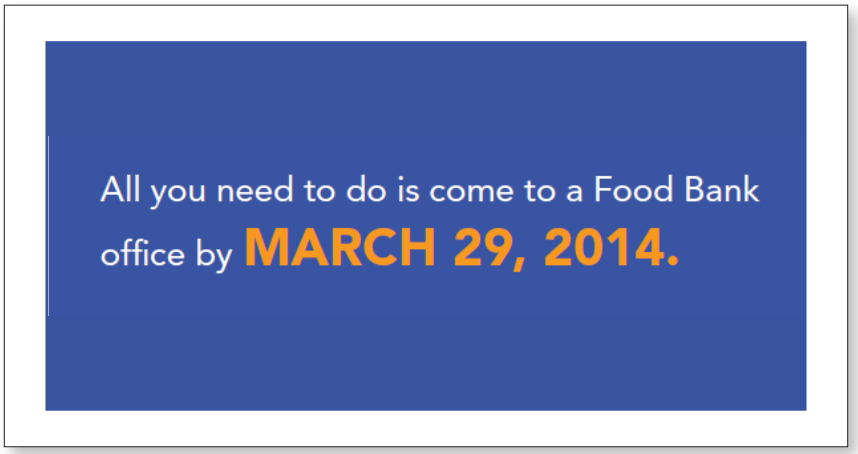
[9] Dechausay, Anzelone, and Reardon (2015).

As mentioned in previous chapters, Paycheck Plus is an Earned Income Tax Credit (EITC)-like earnings supplement being offered to a select group of low-income single adults in New York City. Program operators designed an informational meeting to ensure that participants understood that they had to work and to file their taxes in order to claim the benefit. Those in the BIAS program group were sent an initial postcard that imposed an early deadline to prompt action (as shown in the excerpted language in Figure 4.3). A second postcard was timed to arrive around the early deadline date, offering an additional two-week extension. The second deadline essentially offered an additional opportunity to claim the benefit. These postcards also incorporated several other behavioral concepts.

In contrast, the standard postcards did not advertise any early deadline and listed the period that offices were open to participants in neutral language: "Come into a VITA site between March 11 and April 9 to receive a $50 gift card." Participants in the behavioral groups attended meetings more quickly and in higher numbers than did those in the standard groups before the artificial early deadline, and continued to be more likely to respond to the request through the final deadline. Each version of the postcard had deadlines, but the deadlines were made more prominent on the behavioral postcard.

Findings from the Oklahoma child care test point to an example of how the deadline that matters to clients may be different from the deadline that is important to the provider and agency. If a parent has not renewed 10 days before the official deadline, the agency sends a closure notice to the parent and to the parent's provider, stating that benefits will end on the renewal date.[10] While the parent

FIGURE 4.3 Making Deadlines Prominent: Excerpt of Postcard Sent to Program Group in New York Site (Paycheck Plus)



[10] This case is an example of making deadlines more prominent, as the provider-side intervention involved sharing new information on the current deadlines that was not known previously. However, the example may also illustrate a channel factor — or an addition that provides a smooth path to action — for providers to ensure stable payment for their services. Sending early notice of the various renewal deadlines to providers enables them to lower the risk of lost payment for services provided during the grace period and after benefits closure.

receives prior notices, the 10-day notice is the first communication that providers receive. However, Oklahoma provides a 30-day grace period after the deadline, during which time parents can still submit renewal applications before their case is closed. If a parent is approved for renewal during the grace period, Oklahoma will pay the providers retroactively for any service provided. Parents who do not renew by the end of the grace period must reapply as new clients, and the provider will not receive payment for any services rendered during the grace period.

Child care providers had a financial incentive to ensure that their clients renewed on time, because on-time renewals lower their risk of remaining unpaid for delivering services during the grace period. However, the deadline that is salient to parents is likely the one at the end of the grace period, since they know they have this additional time to submit documentation. The findings suggest that the provider intervention, which enlisted the support of the child care providers to encourage parents to renew before the 10-day notice, helped parents renew on time. The client intervention, however, in which additional, behaviorally informed information was mailed only to parents and not to providers, did not appear to improve on-time renewal, but may have helped parents renew by the end of the grace period following the renewal deadline.[11]

Personalization

The concept of personalization was implemented in BIAS in two distinct forms — through written communications and through personal interactions. Personalizing written communications includes techniques like handwriting a note or using technology to pre-populate information in communications materials, such as the client's name, specific greetings, or reminders on sticky notes. One study found that adding a handwritten message on a sticky note to encourage faculty members to complete a survey increased the number who obliged by a statistically significant amount.[12]

A similar technique was used in the BIAS Los Angeles study, which included a personalized sticky note. The text of the note was set in a font that looked handwritten, adding a personal element to a communication from an agency that may have otherwise seemed impersonal to clients.[13]

Personal interactions are considered higher-intensity strategies, which could include calling parents to provide additional information or to ask whether they have any questions about information they received. In a study conducted in 2012, H&R Block tax professionals helped families complete the Free Application for Federal Student Aid (FAFSA) with information that was on file from their tax returns. Those who received personal assistance with the application were substantially more likely to submit it, enroll in college, and receive more financial aid.[14]

[11] Mayer, Cullinan, Calmeyer, and Patterson (2015).

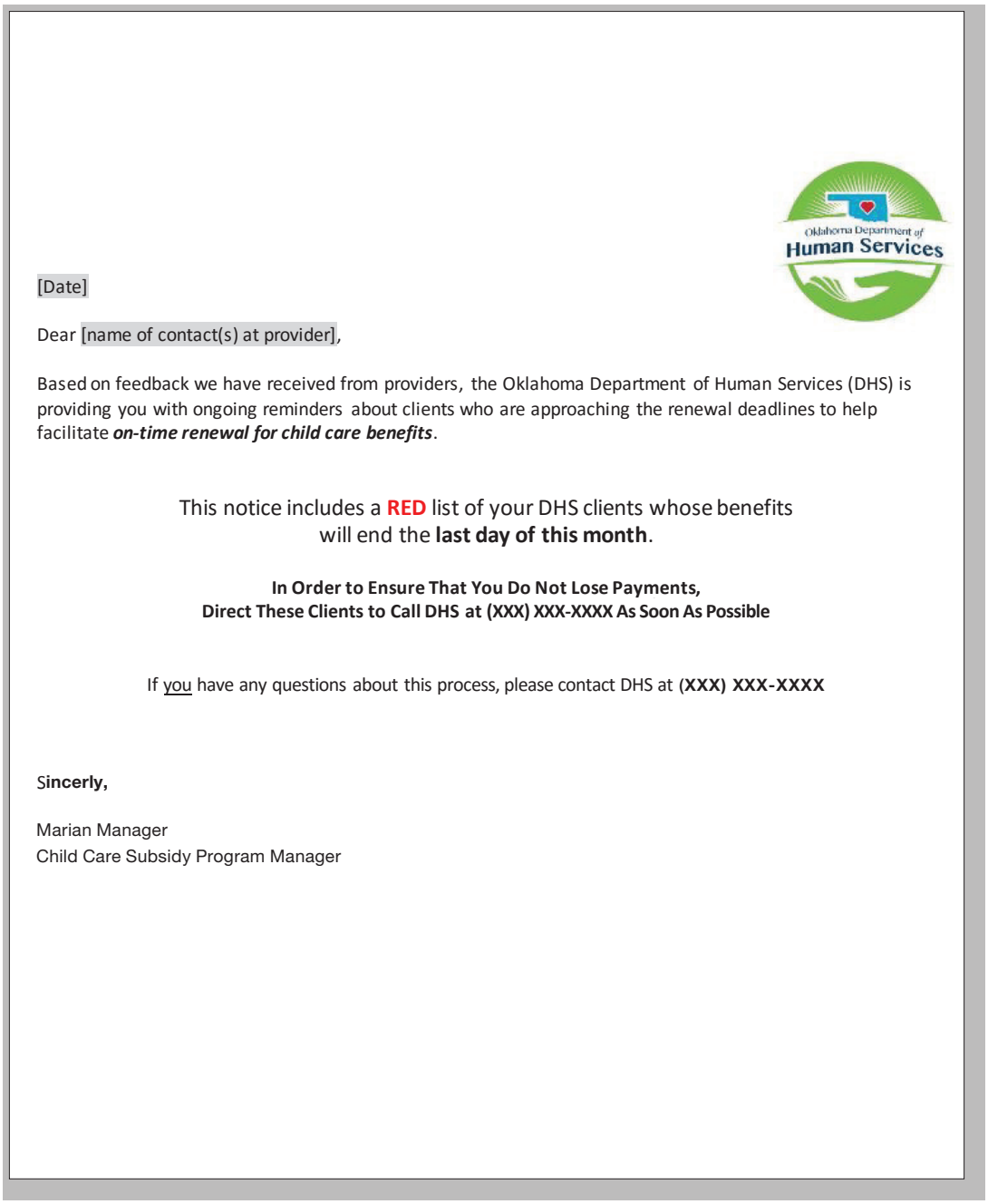
[12] Garner (2005).

[13] Farrell, Smith, Reardon, and Obara (2016).

[14] Bettinger, Long, Oreopoulos, and Sanbonmatsu (2012).

In both the Oklahoma and Indiana child care sites, the impacts were greater when providers contacted parents to assist compared with providing written communications alone. Finding the right point in time to introduce these personal interactions is important for maximizing benefits relative to costs. (See Figure 4.4 for an example of personalized outreach.) Agencies can implement this idea by ensuring that staff exchanges with clients happen when clients are facing key decision points. (See Box 4.1 for more insights on the value of personalization.)

FIGURE 4.4 Personalization: Excerpt of Letter Sent to Providers in Oklahoma Site



Oklahoma Department of Human Services

[Date]

Dear [name of contact(s) at provider],

Based on feedback we have received from providers, the Oklahoma Department of Human Services (DHS) is providing you with ongoing reminders about clients who are approaching the renewal deadlines to help facilitate ***on-time renewal for child care benefits***.

This notice includes a **RED** list of your DHS clients whose benefits will end the **last day of this month**.

In Order to Ensure That You Do Not Lose Payments,
Direct These Clients to Call DHS at (XXX) XXX-XXXX As Soon As Possible

If you have any questions about this process, please contact DHS at **(XXX) XXX-XXXX**

Sincerly,

Marian Manager
Child Care Subsidy Program Manager

Note: Names and other personal information have been changed to ensure confidentiality.

BOX 4.1 Expert Commentary: The Need for Personal Assistance

One limitation in many of the "nudges" that are examined in this report is that they rely on mailings or text messages for communication. The report hints that personal assistance — a type of "hand holding," whereby an agent provides live help (perhaps face to face, over the phone, or through Skype) in completing a task that is unfamiliar to an individual but familiar to the agent (like explaining the advantages of modifying child support obligations to incarcerated parents) — could be more effective.

Personal assistance can take several forms, from just explaining information verbally, instead of by mail or text, to helping individuals through the entire application process immediately. It may address many potential barriers to program take-up, even when options like changing the enrollment default or shortening the application further are not available. For example, it reduces procrastination by making the application process more convenient and more appealing. Offering help to "get it done now" while already interacting minimizes disruption and lowers opportunity costs of time. Personal assistance could also help reduce anxiety about making a mistake or being reminded about one's low-income status. It speeds up and simplifies the process, avoiding the need for detailed instructions and review. It may even eliminate the need to look at a form or an application at all. Offering assistance increases a form's visibility and may improve perceptions about the value in filling out the form. The personal encouragement may also empower individuals to consider more the possibility of change. Most important, a personal interaction has the potential to increase trust in reacting to encouragement to do something unfamiliar. Analogous to responding to a doctor's or an accountant's advice, we are more likely to take action when we trust the person who is offering that advice.

The BIAS study results from Indiana and Oklahoma, in addition to the H&R Block FAFSA experiment described in the text, suggest that behavioral interventions that are designed to increase active participation in benefit programs may be more successful if they can incorporate more personal interactions with targeted individuals. The interventions may be more costly, but may make up for that added cost in being more effective. Springing on the opportunity to complete a form "now" or being able to respond to individuals' questions, and creating more trust in trying something new, may make an important difference.

Philip Oreopoulos
Professor of Economics and Public Policy, University of Toronto
Research Associate, National Bureau of Economic Research
Research Fellow, Canadian Institute for Advanced Research

Loss Aversion

Sometimes reframing the "ask" is enough to lead people to a different outcome. Loss aversion refers to a preference for avoiding losses over acquiring gains of equal size, relative to a reference point. Studies suggest that the prospect of a loss is twice as powerful, psychologically, as the possibility of a gain.[15]

In a study that was conducted in a school district near Chicago, teachers were divided into three groups: the first was not eligible for a cash incentive, the second was promised a traditional cash bonus if their students did well at math (a gain), and the third was given a cash bonus up front but had to return some or all of the money if student performance did not improve (a loss). Findings showed that students of teachers who received the traditional bonus performed no better than students of teachers who received no incentive at all, but test scores improved significantly for students of teachers who were given the bonus up front, with the possibility of losing it later on.[16]

The BIAS team created messages in several tests that emphasized the losses people could face if they failed to take action, as opposed to highlighting potential gains from taking action. The "loss messages" were not more punitive than the "gain messages" — the dollar amounts were the same in both conditions; the only difference was the way the amount was framed in messaging. In the Los Angeles pilot, the team designed two sets of notices and sticky notes, shown in Figure 4.5, that

FIGURE 4.5 Loss Aversion: Excerpts of Notices Sent to Program Groups in Los Angeles Site

By not attending your appointment, you may:

- ✗ Miss out on jobs available now *or* training and education for your career.
- ✗ LOSE up to $2,508 a year in cash benefits.

compared with...

By attending your appointment, you may:

- √ Take advantage of jobs available now *or* training and education for your career.
- √ KEEP up to $2,508 a year in cash benefits.

[15] Tversky and Kahneman (1991).

[16] Fryer, Levitt, List, and Sadoff (2012).

differed from one another in that one set of notices emphasized the benefits that participants would gain by attending a reengagement appointment, and the other set emphasized the losses they might incur by failing to do so. In this way, the notices changed the messaging about existing policies and did not alter actual policy. When compared with the control group outreach, the loss-framed notice increased positive engagement. In contrast, the notice that framed the message as a gain, when compared with the control group outreach, did not produce a statistically significant impact. The findings support the idea that people respond more to the risk of losing benefits than the promise of receiving benefits.

Ease

The field of psychology has demonstrated that people have a limited capacity to process, absorb, and recall information. Given this finding, a key mantra in behavioral science is to make things as easy as possible in order to increase the likelihood that people will act. One study found that incorporating "Quick Enrollment" into a retirement savings plan, which simply highlighted a preselected contribution level and made it easy for employees to choose this option, increased enrollment significantly.[17] People have a tendency to stick with the status quo, because it is effortless to do so. This is why in many cases behavioral scientists have paid attention to the available default options, knowing that people will probably continue with whatever that option entails.

The BIAS team completed a behavioral diagnosis in Vermont that demonstrates this principle, though a test was not conducted. When participants in Vermont's Temporary Assistance for Needy Families (TANF) program (called "Reach Up") become employed, and exceed the program's income eligibility rules, they qualify for up to a year of work support benefits through a supplementary program called "Reach Ahead." This program provides an employment incentive and assists families in their transition from public assistance by helping them maintain employment. Even though the application for these transitional benefits is relatively straightforward, only about half of eligible families enrolled. In light of the BIAS team's research, the state decided to simplify the process further by making the receipt of these transitional benefits the default for employed TANF families. Eligible families were given the opportunity to opt out of the program, as opposed to the previous approach in which they had to opt in, making the process easier for them. According to the state's data, this change increased Reach Ahead participation by 20 percent in the first year.[18]

Keeping things easy also applies to crafting communications that are straightforward and clear. Communicating effectively with clients is an important first step in encouraging them to complete an action. The BIAS team spent a substantial amount of time parsing through each of the sites' materials in order to simplify the pertinent message and ensure that the main points were prominent to clients.

[17] Choi, Laibson, and Madrian (2009).

[18] Personal communication from Erin Oalican, Vermont program administrator, June 21, 2016.

The team learned that it can be remarkably challenging to develop succinct materials that communicate the agency's expectations of the client clearly. For example, in the BIAS studies that focused on child support, lengthy documents that covered many subjects were often needed in order to protect the agency and clients legally. However, the more complex a task, the less likely it is to be completed. Too much information can prevent people from completing an action, because they become paralyzed by processing what needs to be done and as a result fail to act — a situation known as cognitive overload.

"Ease" can also mean providing participants with all the information they need and redesigning the task they are required to complete. In the BIAS study in Washington, for example, the child support modification process was made easier for noncustodial parents by mailing them the materials they would need to apply for a modification, along with a tip sheet specifying which questions had to be answered, and then reminding them later about the opportunity to apply (as shown in Figure 4.6). This approach eliminated a step in that these parents no longer had to request a packet — it was just mailed to them automatically.[19]

The overarching purpose of "ease" is to ensure that the program designer is spending sufficient time thinking about the most effective way to design a process and communicate that process to the

FIGURE 4.6 Ease: Excerpt of Tips Sheet Used in Washington Site

All you have to do is fill out the forms and mail them back to DCS to have your case reviewed.

Forms need to have:

1. **A signature every place that asks for it.**
2. **A date next to every signature.**
3. **It's ok if you don't know the answer to every question. For example, you can write "I don't know" for anything you don't know the answer to.**

Child's Present Address or Whereabouts | DO NOT KNOW

4. **If you don't know the answer, just tell us why. For example you can write "I am incarcerated."**

NUMBER I PREFER TO USE FOR THE HEARING I am incarcerated.

No person, because of race, color, national origin, creed, religion, sex, age, or disability, shall be discriminated against in employment, services, or any aspect of the program's activities. This form is available in alternative formats upon request.

[19] Glosser, Cullinan, and Obara (2016).

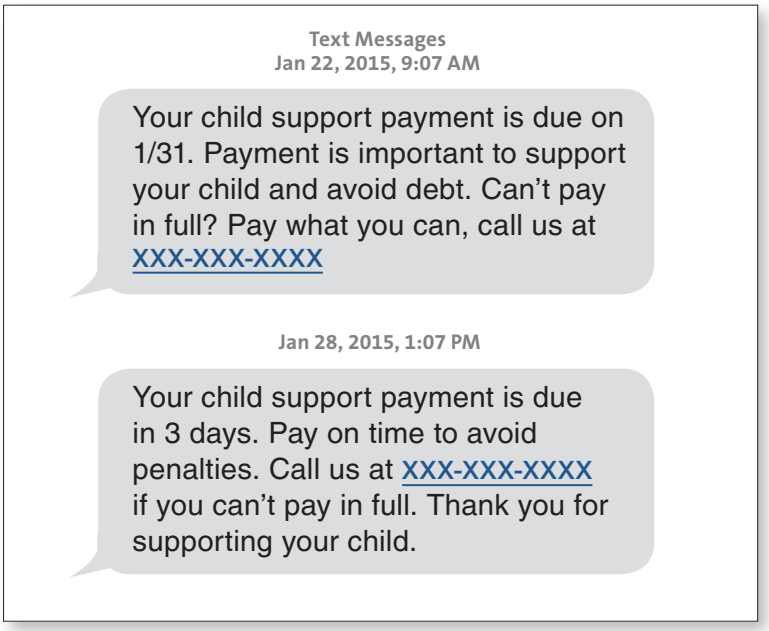
client, minimizing potential barriers whenever possible. It may be helpful for administrators and staff to go through the process from the perspective of the client to discover where they may become confused or unclear about what to do next.

Reminders

Repeated contact (through reminders and through various communication channels) generally leads to stronger results. Similar to "Ease," reminders reduce the cognitive load required to complete an action successfully; they accomplish this goal by providing a cue that the action hasn't been completed. Literature from the behavioral science field has documented that reminders can be successful tools for spurring action in health, voting, and personal finance, among other areas.[20] One example is a study by Dean Karlan and colleagues, which found that a regular text-message reminder to save money increased savings balances by 6 percent.[21] Almost everyone has planned to complete a task and has simply forgotten to do it — and reminders increase the likelihood of remembering.

Nearly all the BIAS tests used some form of reminder, most notably those in Ohio. The Ohio child support programs were mailing a monthly reminder notice to some noncustodial parents who owed child support payments, but it was not sending such a notice to all of them. The BIAS team hypoth-

FIGURE 4.7 Reminders: Sample Text Messages Sent to Program Group in Cuyahoga County, Ohio, Site



[20] Cadena and Schoar (2011); Green (2004); Karlan, McConnell, Mullainathan, and Zinman (2016); Lantz et al. (1995); Rodgers et al. (2005). As shown in Appendix Table A.2, reminders were the top studied intervention in field experiments based on a scan of 291 studies conducted by the BIAS team.

[21] Karlan, McConnell, Mullainathan, and Zinman (2016).

esized that the lack of reminder notices might result in fewer payments being made than would otherwise be the case. Reminders increased the number of payments made by about 2 percentage points. Figure 4.7 provides an example of text-message reminders that were used in one Ohio test.[22]

The Paycheck Plus study launched two rounds of experimentation that serve as another example. In Round 1, participants who received postcards *and* text messages were more likely to respond than those who received only postcards. In Round 2, all participants received communications that were designed using behavioral concepts. This round included several different forms of outreach using all communication channels for which the participant had provided contact information and consent — mail, e-mail, text, and robocalls. Launching a second round of outreach increased the total number of participants who attended a meeting.

CONCLUSION

The BIAS team followed the behavioral diagnosis and design process at each site and then looked back and constructed the SIMPLER framework based on commonly applied insights across the BIAS studies. Each of the BIAS studies suggests that the context of the program matters: For example, in some sites the intervention involved making deadlines prominent, among other concepts, while in other sites no work involving deadlines was explored. In most sites, clients were aided through reminders, multiple opportunities to perform a task, and additional help at critical junctures — all ways that programs can provide relief for cognitive burdens.[23] In this way, SIMPLER is a summary tool and is not a prescriptive formula for the implementation of behavioral concepts. Most of the concepts have been implemented and studied widely beyond the BIAS tests and across many domains, as shown in Appendix Table A.2. Together with the BIAS studies, this breadth suggests that the SIMPLER framework is a helpful organizing structure for thinking about designing and implementing behavioral interventions and can be a good starting point for policymakers and administrators.

As the expert commentary that follows suggests, the SIMPLER framework is not inherently limited to behavioral nudges targeted to clients. BIAS was deliberately focused on designing simple, low-cost interventions or nudges (that is, simple changes in communications, removal of hassle factors, and so forth). Having established that behavioral science concepts can be implemented in human services programs and that such interventions can improve outcomes, the applied behavioral science field is poised to move to the next stage of more intensive behavioral interventions. As described in the commentaries that follow, these intensive interventions may start to blur the lines between what is considered to be behavioral and what is considered to be a traditional neoclassical economic approach. This blurring may be desirable, as such a development would mean that considering real human behavior when designing programs has become commonplace.

[22] The example shows a text message reminder used in the study in Cuyahoga County, Ohio. The text messaging intervention resulted in 49.8 percent of parents submitting a payment compared with 47.3 in the control condition, for a statistically significant impact of 2.5 percentage points (not shown in Table 4.2). See Baird, Cullinan, Landers, and Reardon (2016).

[23] Mullainathan and Shafir (2013).

Expert Commentary

The Elegant Simplicity (and Potential Pitfalls) of Simple Frameworks

Dilip Soman

Professor and Corus Chair in Communication Strategy, Rotman School of Management, University of Toronto, and Co-Director, Behavioural Economics in Action at Rotman (BEAR), University of Toronto

Chapter 4 presents a framework that abstracts the findings from several BIAS tests and provides a mnemonic to summarize the seven principles of successful behavioral interventions. The framework is elegant and catchy, and I applaud the BIAS team for their effort in creating it. For a casual reader of the report, SIMPLER is a handy heuristic to remember that there are seven types of interventions that helped BIAS research teams tackle the myriad of bottlenecks that they encountered in encouraging behavior change — social influence, implementation prompts, making deadlines, personalization, loss aversion, ease (of materials and processes), and reminders. This mnemonic builds on and complements the "EAST" (Easy, Attractive, Social, and Timely) framework that the U.K. Behavioural Insights Team has developed and that has proven to be the basis for several successful projects completed by the team as well as many others.[1]

Frameworks like SIMPLER and EAST are useful in many ways, in particular because they provide a heuristic in the form of a simple set of guidelines that the relatively inexperienced practitioner could apply to a given behavioral change situation. We know from the literature that while heuristics represent a simplified approach to any decision-making process, they are also functional in many ways — they allow for quick judgments and decisions, thereby making decisions more efficient, and can be used without a deep understanding of the underlying science.[2] In addition, mnemonic heuristics like SIMPLER have the added benefit of providing a good vocabulary for the relatively uninitiated practitioner to use in learning a new set of skills. In particular, SIMPLER will likely not only have good advertising value (in that it is catchy and is easy to remember) but could also be used as the basis for training programs and workshops. Finally, these heuristic frameworks serve as a good diagnostic tool to allow a behavioral scientist who is auditing a particular process to get started with diagnosing and identifying potential bottlenecks. In sum, SIMPLER is an invaluable *descriptive* framework.

[1] Service et al. (2014).

[2] Hogarth (1981).

Yet, research also suggests that heuristics could sometimes backfire and that there are dangers in using descriptive frameworks in a *prescriptive* manner without a careful study of the underlying context.[3] While heuristics are functional in stable environments, they could lead the user astray in environments that are structurally different (that is, where the background variables are fundamentally different), noisy (for instance, where the relationships between variables change across contexts), or dynamic (where, for example, these relationships change with time). In particular, research shows that heuristics that are learned in one set of domains could backfire spectacularly in others. For instance, a 2007 study documented the "duration" heuristic — the belief that the longer the duration of a service experience, the more value it provides to the end user.[4] This heuristic could be learned in several consumption domains — longer massages are better than shorter ones, more time spent by a cleaning service usually results in a cleaner home, and so on. However, individuals often misapply this heuristic in other domains, resulting in poor evaluations and choices. For instance, in situations where a service provider works toward a concrete goal (and therefore efficiency might be the more relevant yardstick), the opposite relationship between time and quality is true. A locksmith who opens a lock quickly and a dentist who completes a painful drilling procedure sooner should be preferred — but are often not — over their slower counterparts.[5]

One word of caution to practitioners who are lured by the elegance of the SIMPLER heuristic is this: before applying the framework, it is critical to spend some time in diagnosing the context in which the end user is making decisions and judging whether the context is similar to the BIAS projects on which the framework is based. Many of the projects described in this report involve behavior changes of individuals in an informationally dense and logistically challenging environment. In this context, it is easy to see that the various elements of SIMPLER are designed to increase motivation, simplify information, and reduce the logistic burden on the end user. Whether SIMPLER would work as a prescriptive heuristic in other domains — say, with expert end users who don't have enough time to do the necessary paperwork — is another question. Perhaps the next calling for behavioral architects, then, is to develop more nuanced frameworks that are not just descriptive, but potentially also prescriptive in a given set of contexts.

[3] See Kahneman and Tversky (2000); Kahneman, Knetsch, and Thaler (2000); and Tversky and Simonson (2000).

[4] Yeung and Soman (2007).

[5] Yeung and Soman (2007).

In closing, I believe that the SIMPLER framework provides both the behavioral scientist and the practitioner with immense value if applied appropriately. As a community of behavioral scientists, there are three things we should do to ensure that the results from projects like BIAS convert into generalizable insights:

THE PROCESS OF BEHAVIORAL MAPPING IS CRITICAL. The maps provide us with a good understanding of where potential bottlenecks may be. As good practice, a behavioral map should always precede the use of frameworks like EAST and SIMPLER.

A "WHAT WORKS" DATABASE. Ly and colleagues recommend the development of an online repository that has entries on context, interventions, and results of projects.[6]

MULTIPLE METHODS OF DATA COLLECTION. One particularly heartening element of the BIAS process is the use of multiple methods of data collection in the behavioral mapping process. Randomized controlled trials like those used in BIAS are widely considered the most reliable method to determine whether a given change is working. However, if it is not feasible to run a randomized controlled trial, other tools and data collection techniques such as laboratory experiments, observation studies, design workshops, or usability research could be conducted to determine the usefulness of interventions.

[6] Ly, Mažar, Zhao, and Soman (2013).

Expert Commentary

Missing Elements Provide Opportunities to Extend the BIAS Work

Sim B. Sitkin

Michael W. Krzyzewski University Professor and Director, Behavioral Science and Policy Center, Duke University, and Cofounder, Behavioral Science and Policy Association

The BIAS project is an ambitious effort to apply behavioral science principles to improving services related to child care, child support, and work support. As is the case with most behavioral research, the BIAS project focuses on individual client behavior. This approach provides significant benefits by allowing for low-cost, incremental improvements that can accumulate over time.

One extension to this individual-level approach would be to consider the behavior of individual staff members who work with those clients. Another beneficial but larger-scale extension could be to design macro behavioral interventions that target a group (for example, a family or work unit) or an entire organization (the larger context within which individuals behave).

SIMPLER WITH A MACRO FOCUS

The SIMPLER framework, discussed in detail in chapter 4, describes the behavioral principles applied across BIAS: social influence, implementation, making deadlines, personalization, loss aversion, ease, and reminders. While it focuses on behavior at the individual client level, this framework could readily be extended beyond the individual to the organization. The examples below were developed by drawing on research from other related disciplines, including sociology, organizational behavior, and social psychology.

SOCIAL INFLUENCE. The BIAS project emphasizes individual decision making by assessing clients' responses to concepts like social proof and social persuasion. But "thinking fast" — which refers to our automatic, instinctive decisions and actions — is often influenced by formal rules or titles as well as by group norms.[1] For example, Lynne Zucker showed that the tendency to conform to group norms in ambiguous situations can not only be strengthened but also can become permanent simply by giving a formal title to an

[1] Kahneman (2011).

individual who advocates for the norm.[2] Much research has shown, however, that social influence is not just a matter of one individual's authority — that is, not just one person influencing another person — but relies heavily on the group and the organization in which individuals make their choices.[3] For example, a social worker trying to positively influence the behavior of an individual client might be more effective by working with a family group than with the client in isolation. Similarly, a manager trying to enhance the effectiveness of an individual caseworker might be better able to achieve that result by working with a unit or team and its collective norms, practices, and expectations than by treating that individual worker's performance as an isolated situation.

IMPLEMENTATION. Organizations that implement BIAS project initiatives need to tailor programs to distinct geographical needs as well as ensure that such BIAS initiatives permit flexibility in the approach to providing a service. For example, a behavioral initiative may combine tight rules and procedures with more open-ended and empowering processes, as determined by the situation, which can foster staff and client ownership. In turn, this greater engagement can lead to more effective outcomes than what could occur by imposing uniformly strict or uniformly flexible processes throughout. The delivery of child support services, for instance, could be altered by changing rules in these ways. "Tight" and "loose" rules can coexist in one program, and research has shown that together they can be more effective in shaping outcomes as long as the rules are tight where they need to be (for example, imposing strict requirements for the minimum level of documentation needed to be eligible for a service) and looser in other instances (such as allowing a caseworker to contact clients to secure additional information in various ways).[4]

Similarly, allowing individual client service team members to take on a combination of specialist and generalist roles can foster more effective client service teams, by developing a more knowledgeable, a more flexibly deployed, and a more engaged staff. That is, as professionals gain more experience, some may develop a deeper knowledge of a particular area and become area specialists. But some can also develop a strong general knowledge in addition to gaining expertise in one area. Compelling staff members to choose between being either a specialist or a generalist can put everyone at a disadvantage: Some employees might become general managers even though their forté is specializing in one area, whereas others are obliged to work only in their specialty and are not allowed to fully use their general knowledge. Employees can do both general and specialized work either sequentially (on an alternating basis) or at the same time — but allowing for the right mix tends to motivate employees, make the best use of their talents, and result in better outcomes.[5]

[2] Zucker (1977).

[3] Wooley et al. (2010); Edmondson (1999).

[4] Sitkin, Sutcliffe, and Schroeder (1994); Sutcliffe, Sitkin, and Browning (2000); Cardinal, Sitkin, and Long (2010).

[5] Hackman and Oldham (1976); Allen and Katz (1986); Bailyn (1991).

MAKING DEADLINES AND PERSONALIZATION. Deadlines that are customized to individual circumstances have been shown to be effective for ensuring that individuals are meeting their goals by decreasing the likelihood that they will procrastinate and increasing the likelihood that they will be more attentive and motivated to meet their objectives. This same process applies to the organizational level, and merits direct testing with a BIAS focus. In general, organizational circumstances vary as much as individual circumstances do, and deadlines can be used with groups or organizations as well as with individuals. Deadlines that are imposed on a work unit or an organization create a drive that can affect individual behavior, primarily through their effect on collective practices. For example, research shows that deadline-driven, organizational-level performance metrics such as quarterly reports or rewards lead to spikes and troughs in performance.[6]

LOSS AVERSION. A substantial body of research has found that individuals do not like to lose what they already have, and the same finding holds for organizations and groups. Both individuals and organizations generally deal with the threat of extreme failure and its resulting negative feedback — which reflects a loss — in one of two ways: (1) they either dig in their heels and remain committed to their previous behavior, even if it was ineffective (known as "escalating commitment to a course of action"), rather than try something new that might be more effective and might yield a "gain"[7]; or, (2) they become more passive and pessimistic in response to extreme or numerous failures, which can be so debilitating that threatened loss does not have the predicted motivational effect (known as "learned helplessness") — when, for example, a team neither looks for nor feels empowered to respond to problems, but just awaits instructions.[8] To address these problems, research by Karl Weick suggests that reducing scale (to pursue "small wins") can build positive momentum, and my research suggests how reducing scale to allow for "small losses" — that is, reducing the scale of negative feedback so it doesn't induce a severe emotional reaction that results in either rigidly adhering to an existing, if ineffective, course of action or doing nothing at all — can leverage the desire to avoid or reverse losses while providing positive motivation to learn from mistakes and take action.[9]

EASE. Structure makes some things easier and other things harder; there are always two sides to the coin when new designs are put in place. The report alludes to many interventions that could be grounded in organizational behavior research, such as the impact of "slack," "changing the way agencies work," "inform[ing] the provider" (rather than the client), and enhancing "an awareness of context [to foster] a more coordinated service deliv-

[6] Heath, Larrick, and Wu (1999).

[7] Staw (1976).

[8] Staw, Sandelands, and Dutton (1981); Singh (1986).

[9] Weick (1984); Sitkin (1992).

ery approach."[10] Similarly, the report's acknowledgment that "innovation can be hindered by tradition" suggests the value of drawing on research into the way an organization's culture affects the capacity for change and innovation.[11] Organizational research suggests, for example, that it is helpful to adopt distinct structures and processes when the goal is to build capacity (learning) versus maintaining or improving performance or reliability.[12] When problems are well understood and their solutions are clear, very specific goals can be articulated, and structures that include milestones and monitoring can focus on those goals. But when goals are very ambitious, problems are ill-defined, or proposed solutions are less certain (or even untested), then the needed schedule, resources, incentives, and process structures are quite different.[13] For example, frequent monitoring and micromanaging can be helpful when performance reliability problems can be anticipated and related problems and solutions are clearly defined and well understood. In contrast, monitoring and micromanaging can be counterproductive if teams are tasked with developing innovative programs and strategies or with solving ambiguous or unfamiliar problems.[14] The general point is that, when developing and implementing behavioral interventions, it is important to recognize that organizational structures that serve to facilitate routine and reliable performance are different from the structures that facilitate radical innovation.

REMINDERS. Research has shown that reminders can have significant effects, which can be extended by looking first at the broader organizational structure rather than the immediate environment of the individual. An individual focus has the advantage of changing behavior through the use of low-cost reminders, while an organizational focus has the advantage of influencing large groups of people in ways that make the new behaviors seem natural, or even inevitable. Organizational research on routines and institutional procedures shows how embedded reminders (such as posters to wash your hands before returning to work) serve as guides, making some behaviors easier while hindering undesired behaviors. Such institutional reminders thus create the opportunity for long-lasting change by affecting perceptions of what is natural in a particular environment.[15]

[10] Sitkin et al. (2010); Weick (2000).

[11] See the operational lessons in Chapter 5 for some of these findings.

[12] March (1991); Sitkin, Sutcliffe, and Schroeder (1994); Adler and Borys (1996).

[13] Sitkin et al. (2010); Weick (2000).

[14] Bernstein (2012).

[15] Feldman and Feldman (2003); Feldman and Pentland (2005).

IMPLICATIONS

The foundation laid in the BIAS project provides a terrific springboard for future work in bridging the divide between rigorous research studies and behavioral science in practice, and accumulating modest results to accomplish significant long-term progress. To achieve that goal, a broader view that builds on the current platform has several key implications. First, don't ignore the system; contextual effects can facilitate individual outcomes. Second, expand from a focus on clients to include staff and staff groups. Third, recognize the significance of unintended design effects on groups, which can be misconstrued as individual choice, when it is actually a collective choice or structurally determined and erroneously ascribed to choice.[16] Fourth, draw on both best practices *and* best science for insights. Fifth, randomized trials can occur at the group or organizational level. These studies are more expensive and riskier than nonexperimental studies, but also potentially have greater impact over time. Sixth and finally, it would be valuable to more broadly reflect the behavioral and social sciences — not just behavioral economics and psychology, but also sociology, organizational behavior, and so forth.

In summary, while a focus on individual behavior change is a critical step in advancing practice, individual behavior is deeply and unavoidably embedded in organizational structures, processes, and norms. While many principles derived from psychology or behavioral economics can be generalized to the organizational level, new insights are available when we try to understand problems and identify potential solutions through an organizational lens.[17] That is the next challenge to tackle in further advancing this important work.

[16] Lessig (1999).

[17] Heath and Sitkin (2001).

Nudging Change In Human Services

5 Applying Behavioral Science Concepts in Human Services Programs: Operational Lessons

This chapter summarizes the main lessons learned while implementing behavioral diagnosis and design in the Behavioral Interventions to Advance Self-Sufficiency (BIAS) project. The lessons compiled here come from sites where the team launched successful tests, as well as from sites where evaluations were not completed because of unanticipated changes in the operational context. Overall, this chapter provides practical insights about the implementation of behavioral tests in human services programs. Following the chapter, a commentary by Susan A. Brown, Director of the Franklin County Child Support Enforcement Agency, offers a practitioner's perspective on the project's operational lessons.

In general, the BIAS team found that behavioral science provided the language and tools for program administrators and staff to envision new approaches to service delivery. The behavioral diagnosis and design process enabled staff in government organizations to collaborate with the BIAS team in a process of creative problem solving.[1] Staff members were generally excited to participate in this work, and programs benefited from the process beyond the specific interventions that were tested. At the same time, the organizational context and lack of discretionary funding to support the interventions constrained each stage of behavioral diagnosis, design, and testing to some extent.

Table 5.1 provides a general timeline that reflects the types of interactions between site staff and the research team, and goals during each stage. As shown, the engagement started with intensive interactions between the BIAS team and staff at the director and managerial levels to generate cooperation, identify the problem of interest, assemble key staff members to support the research, and describe the policy context. The director usually handed off day-to-day oversight of the evaluation to another manager who coordinated the BIAS team's site visits and requests for information.

Most interventions were designed and put into the field within one calendar year.[2] Data collection generally lasted for approximately six months. These timelines were pos-

[1] There are many established models of creative problem solving. See, for example, Osborn (1963); Parnes (1967); Isaksen and Treffinger (1994); and Puccio, Murdock, and Mance (2005).

[2] In some cases, additional time was needed to execute data-sharing agreements. That time is not included in the timeline.

sible because the BIAS tests focused on changes to existing communications strategies. It would have taken more time for agency review and training if the tests aimed to fundamentally change the ways staff members interacted with clients or program policies. In addition, the individuals whom these interventions targeted were pre-identified — they were already receiving services or had signed up on a waiting list to receive services — so many individuals could receive the intervention in a short timeframe. The timeline might have been extended if the interventions had targeted new clients at the point of enrollment, or individuals who had not yet expressed an interest in the program's services.

TABLE 5.1 Example of a Site Timeline

Stage	Timing	Interaction	Goals
Define	Months 1-3	• Weekly or biweekly teleconferences with program director and key managers	• Explore problems identified through agency data and feedback. • Understand organizational context. • Develop common goals for the BIAS evaluation. • Identify a program liaison.
Diagnose	Months 1-6	• Weekly or biweekly teleconferences with study liaison and others • 1-2 site visits to hold focus groups and observe program operations	• Cultivate engagement by listening closely to staff experiences and ideas for solutions. • Request data needed to better understand key drop-off points in customer engagement, or spikes in staff errors. • Identify key problems of interest and develop hypotheses about the reasons problems occur (i.e., the bottlenecks). • Create a process map of service delivery with behavioral bottlenecks indicated.
Design	Months 6-9	• Biweekly teleconferences with study liaison • Intensive consultation with academic behavioral experts	• Propose several evidence-based interventions designed to respond to behavioral bottlenecks. • Assess feasibility of implementing interventions and conducting a random assignment evaluation. • Produce a memo that summarizes conclusions from behavioral diagnosis and design study.
Test	Months 9-13	• Monthly teleconferences with study liaison and relevant managers • 1-2 site visits around launch of intervention	• Professionally design any new communications materials. • Train staff on study procedures • Monitor implementation of study procedures, and make changes as needed to address problems.
Follow Up and Iterate	Months 14-16	• Review meeting with program director, study liaison, and other managers	• Analyze impacts of intervention. • Consider next steps, including modifying the existing intervention and testing again (rapid cycle evaluation).

The agencies that collaborated with BIAS did not receive funding to offset costs associated with their participation. It is, therefore, especially noteworthy that they were able to commit to the level of engagement reflected in Table 5.1, and put evaluations into the field so quickly. The successes and challenges outlined in the next section must be understood within a context in which the only additional program resources available were technical assistance from the BIAS team and, in some cases, an intern hired by the BIAS team to support the study at the agency.

KEY INSIGHTS

The following sections summarize the operational lessons from the BIAS project and help to add more real-world context to the discussion of the behavioral diagnosis and design framework. This is not a detailed "how-to" guide. Instead, the following sections point to the implications of such work for organizations, staff, and resources. The first two sections provide agency-level insights organized by the behavioral diagnosis and design stages. The third section looks to the future, sharing considerations for institutionalizing the kind of work BIAS started and implementing it on a larger scale.

Diagnosis

- Behavioral diagnosis is most reliable and efficient when programs have high-quality performance data.

The first step in the diagnosis process is to collect information about the way a program has functioned in the past. Ideally, this information consists of a combination of qualitative data from interviews and existing documents, and quantitative data from reports and special data requests. The BIAS team often attempted to look at data related to proximal or process outcomes (for example, how many people attend their first recertification appointment, when the intervention aims to increase the rate of recertification) and more distal or ultimate outcomes (such as how many people recertify on time).[3]

In most sites, it was not possible to rigorously assess existing performance using quantitative data. The most accessible and reliable data were connected to payment remittances (that is, data on payments received by the state or vendor, such as child support payments, or disbursements to clients via, for example, child care vouchers). However, reports based on these data could not provide the needed information about the level of difficulty involved in achieving an outcome like payment on a child support order; that is, no information was provided about the various steps it took to collect a child support payment. Reports also did not indicate whether a significant level of attrition occurred before the point of reporting. For example, in using data to examine applications for child support modifications, the reports would not be able to show the various points at which the application process stalled and why. In some cases in which useful data did exist, the individuals who were responsible for producing the requested reports were so overwhelmed with their regular

[3] See Box 2.1 in Chapter 2 for more detail on using descriptive data during the diagnosis phase.

duties that they could not assist in a timely manner. Only four of the sites were able to make substantial use of quantitative data in the diagnosis phase.[4]

While it is often possible to continue without baseline data — as evidenced by the results presented in this report — it is preferable to have it. Data help teams identify meaningful problems to solve, shed light on the points in the current system where bottlenecks may be occurring, and provide teams with an objective target for improvement.

- Programs engaging in behavioral diagnosis and design should be in a relatively "steady state" of operations.

When a program is in flux because of a change in policy or technology upgrades, or when a process is completely new, any existing historical data are inherently unreliable, and predicting the future may be very speculative. The latter is also true with a change in leadership. For example, the BIAS team worked with the National Domestic Violence Hotline (NDVH) for several months on an intervention to increase callers' willingness to wait for an available agent before the agency upgraded its telephone system. It took several months after this change to determine whether the initial problem of interest was still relevant.

- The behavioral diagnosis process leads to the discovery of areas of tension and new insights for every level of staff.

Behavioral diagnosis is a conversation between actors at different levels of complex organizations, ideally enhanced by data, and is organized around a deep concern for the perspective and experience of clients. The BIAS team facilitated this conversation, giving people the opportunity to respond to what others had said. 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. Because behavioral design is committed to simplifying program procedures and eliminating barriers, it was generally necessary to resolve these contradictions. For example, the BIAS team proposed a test of default enrollment into a transitional assistance program for people leaving Temporary Assistance for Needy Families (TANF) in Vermont. While investigating this proposal, the state determined that the original legislative intent was to automatically enroll all eligible individuals in the program and moved to implement this policy rather than first conducting an evaluation. This experience shows how the diagnosis process can be helpful for the organization.

Furthermore, the close inspection of program policies and how they are being implemented is a useful exercise in discovering outdated, inaccurate information that continues to be used. For example, the list of documents needed to recertify child care vouchers in Indiana contained acronyms that

[4] These four sites are Texas; Franklin County, Ohio; the National Domestic Violence Hotline; and Vermont. The latter two sites were only engaged in behavioral diagnosis and did not move on to the testing stage.

were even hard for managers to decipher and items that parents should not have been required to bring because caseworkers could readily look up the information supplied by those items during the appointment. This duplication occurred because different managerial staff had added to the list over time, with few looking to remove unnecessary or overlapping items.

Staff members who had accepted the diagnosis process were generally willing to confront frustrating discoveries about service delivery because the diagnostic data were being collected for a neutral purpose — and not to evaluate job performance — and staff understood that they played a role in the creation of the intervention.

DESIGN

The commitment to putting the client's perspective first — rather than staff's — typically requires doing more than what had been done before, at least in the short term.

BIAS interventions were inexpensive in per person costs, but they typically involved doing something that the program had not been doing before. The diagnoses pointed to the challenges that low-income clients were likely to encounter with program rules and communications. Research on the psychological and behavioral consequences of scarcity suggests that poverty puts cognitive strains on people, leading to a need for programs to provide "additional slack."[5] This need generally meant that behavioral interventions involved incorporating reminders and providing additional help at critical junctures. For example, in the Texas child support intervention, incarcerated noncustodial parents were sent a postcard alerting them to the opportunity to apply for a child support order modification, a prepopulated application, and a reminder postcard. Some tests in Ohio revolved around providing new monthly reminders to pay child support to noncustodial parents who had not been receiving them. While these changes added a small amount of staff time or expense to a process, administrators generally regarded these additional resources as reasonable accommodations to reach program goals.[6]

- Behavioral interventions may involve changing the way agencies work together rather than creating new services.

Although behavioral interventions still require an investment in coordinating and redesigning processes, sometimes a key component of the intervention was to leverage existing resources either inside or outside the organization. The diagnosis process sheds light on these resources by showing where individuals who are relevant to the client's experience are directly or indirectly involved in the process. For example, in Indiana, clients who are using child care subsidies are not just interacting with the Child Care and Development Fund (CCDF) office; they are also engaged with their em-

[5] Mullainathan and Shafir (2013).

[6] See the expert commentary of Susan A. Brown, Director of the Franklin County Child Support Enforcement Agency in Ohio, following this chapter.

ployer or educational institution, child care provider, and social network. It is very difficult to "map" this context thoroughly because it is complex and distinct to each individual. However, an awareness of the context raises questions that may lead to a more coordinated service delivery approach than existed before.

This attention to context can be key to the development of a behavioral intervention, as it was in Oklahoma, where the team designed an intervention that informed *providers* of the child care voucher recertification deadlines for families they served. In the past, providers had no information about these deadlines even though they interact directly with parents who are due for recertification, and they have an economic incentive to help parents complete this process on time. At the end of the study, providers continued to request information on recertification to help families that they served, demonstrating the value of this approach to leveraging networks.[7] As another example, one of the interventions with Indiana's Office of Early Childhood and Out of School Learning encouraged parents with child care subsidies to use quality-rated care by providing individualized referrals to parents on the CCDF waiting list. The referrals were prepared by the statewide child care resource and referral agency via a weekly data match. The creative reorganization of existing resources can supplement the capacity of an individual agency and improve the client experience. Of course, the key is to get the cooperation of the outside organization. This effort is often easiest when incentives are clearly aligned and the work required is within each organization's scope.

- 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. Attempting 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 their potential impact on such elements as legal compliance, mandatory timeframes, and client privacy. Even rules or processes that are widely criticized may stay in place for a long time for these reasons. In each case, it took a substantial amount of time, and conversations at multiple levels of the organization, to streamline communications to the extent that the BIAS team did, and some plans — especially for higher-order changes to processes — could not be implemented. For example, the BIAS team initially worked with Los Angeles to change the process for encouraging TANF recipients to attend a recertification meeting. However, certain forms sent out by the county were designed and mandated by the state. As a result, in combination with the BIAS intervention, clients received several letters in the mail — some with technical legal language explaining the client's and state's rights — which made it difficult to simplify the process.

[7] Statement made at a convening meeting, April 27, 2016, by a former Oklahoma administrator involved with the BIAS project.

These constraints help explain why agencies in the BIAS project did not test defaults, regarded by some as the most powerful way to simplify a choice.[8] In Texas and Washington, where incarcerated parents were invited to submit applications to modify their child support orders, the obvious behavioral solution was for the state to simply modify or suspend those orders automatically. However, this approach was not possible because it would have required a change in the law. Faced with the next-best solution of helping clients fill out order modification forms through the mail, the Washington team was further constrained by concerns about providing legal advice to parents.

When dealing with obstacles to implementing a behavioral solution, teams must consider ways of avoiding or lessening the effects of setbacks while continuing to move toward the goals of the intervention. Not knowing about or feeling beholden to past practice may free team members to think up creative solutions to roadblocks. This is why it can be useful to have heterogeneous teams working on these projects, including some individuals who are not entrenched in organizational norms.

- Innovation can be hindered by out-of-date technology.

Government agencies may struggle to upgrade their methods in ways that align with insights from behavioral science because of ingrained beliefs about the way services should be delivered and outdated technologies. Several behavioral interventions in other contexts have leveraged cell phones to deliver reminders or to fill information gaps, yet many government agencies do not have the capacity to communicate with clients in this way.[9] Some sites were in the process of acquiring the capacity to send text messages during their BIAS intervention but needed time for start-up, including the time it takes to collect clients' cell phone numbers and their consent to receive texts. In the three sites where it was possible to use electronic forms of communication, the BIAS team incorporated this technology into the intervention: in Ohio's Cuyahoga County and in the Paycheck Plus site in New York, reminders were sent by text, and in Washington the first invitation to apply for a child support order modification was delivered by a proprietary electronic mail system in the prison.

Sending text messages can offer a low-cost solution to the need for frequent reminders and information updates for clients navigating program rules, and aligns with many agencies' efforts to go paperless. That said, it takes foresight and collaboration with staff teams that interact with clients at the front end of the process (during the application and enrollment interviews) to ensure that valid cell phone numbers are collected and consent to receive text messages is granted.

- Efforts should be made to pilot-test the solution being designed and the randomization procedure before the very end of the design phase. Otherwise, teams may find that their solution or evaluation cannot be implemented.

[8] Sunstein (2013a).

[9] Castleman and Page (2015); Haynes et al. (2013).

In many creative problem-solving models, concrete plans about how to implement a solution or rigorously evaluate it happen after the solution has been fully designed. That is, a detailed discussion of implementation tends to follow the design stage and precede the testing phase. The BIAS team learned that this sequencing creates a risk that the solution might not be feasible, or random assignment might be impossible. The NDVH test that aimed to extend the time callers were willing to wait on hold without hanging up was ultimately abandoned because of an upgrade to the telephonic system that delivered the "hold" message. After months of work to understand the new system and to adapt the intervention (a new "hold" message) to that system, it became clear that there was no reliable method of randomizing the messages that callers would hear. While this experience could not have been avoided since it was the result of an unforeseen technological upgrade, it nevertheless reinforced the importance of including technical discussions about implementation or pilot testing in the design phase whenever possible.

However, pilot testing can be time-consuming and at odds with the goals of rapid-cycle evaluation (using the results of one test to inform the design of a subsequent test that is launched quickly thereafter). For example, the BIAS team decided after the first round of the Paycheck Plus intervention to attempt to encourage more participants to attend a supplemental meeting by converting an in-person meeting to a phone call. Even though the program operator had a call center and a fair amount of staff capacity, no mechanism was in place for routing calls directly to available staff members. This inability to route calls meant that participants who called in had to be called back. This problem might have been resolved with more time, but the timeline for doing the second round of tests was limited because all outreach was intended to coincide with the tax season. The BIAS team decided to proceed with the second round of tests after the operator agreed to ask callers to indicate times they would be available and attempt a call-back within 48 hours. While it does not appear that participants were harmed by this workaround, the situation illustrates the tension between the desire to pilot an intervention to uncover the challenges and the desire to execute it quickly.

The Human-Centered Design model used by IDEO,[10] which bears many resemblances to behavioral diagnosis and design, offers a useful lesson on this point. In that approach, teams create a rough approximation of the intervention as part of the project phase, during which ideas are generated. This strategy allows teams to put a prototype into the field and get early feedback on several issues, including the likelihood that the intervention can be implemented successfully in the context of an evaluation. When it is possible to include a rapid prototyping phase in behavioral diagnosis and design, it is advisable to do so.

[10] IDEO is a global design company that creates solutions to various problems through design. See IDEO.org (2015).

LOOKING AHEAD

- If ongoing evaluation is going to be a part of the service delivery process, a more nimble technological infrastructure is needed.

The lack of automated systems that could easily be upgraded to vary the communications material being sent out to clients meant that, in most cases, the behaviorally designed materials were produced manually. This approach was labor-intensive and led to a few errors related to timing (such as missing a deadline to send revised materials). In Los Angeles County, Ohio, and Washington, staff put in extra time to assemble the new mailings. In Texas and Indiana, the BIAS team hired a study liaison to oversee the process or perform the manual labor of creating the intervention materials. Agencies that intend to engage in evaluations occasionally to test improvements to particular components of their service delivery model can make do with manual processes and temporary help. However, if the goal is to create an environment where agencies are constantly testing ways to improve outcomes and processes, a higher level of investment is needed, particularly in software that allows agencies to change and randomly assign the design of communications materials quickly (using modern fonts and styles) and to track client interactions in accessible reports.

- Low-intensity, communications-focused behavioral interventions play an important role even when more intense, policy-focused interventions are being considered.

In many cases, the BIAS team identified bottlenecks that were related to policy as well as communication. For example, in the child care subsidy recertification studies, the team grappled with either explaining to clients how to comply with eligibility requirements or trying to eliminate some particularly challenging requirements. The latter course is broader in scope and, in addition to streamlining the process for families, could also affect other aspects of the program (for example, the accuracy of eligibility determinations, staff training, reporting, and so on). There are occasions when these kinds of system-level fixes are needed, and the recent changes to federal CCDF policy that extends the parent eligibility determination period to 12 months demonstrates that recertification may be one of those areas.[11] However, gradual change gives programs time to adapt and plan, and to look more closely at data about user experience. An initial test related to communications — if conducted using random assignment with intervention materials that have been carefully designed — may demonstrate the limits of improved messaging and convince administrators that a more radical solution should be tried.

- The diagnosis and design steps may be easier to achieve when replicating a previous behavioral intervention, but the steps should not be completely overlooked.

[11] In its recent reauthorization, the CCDF program's continuity of care provisions extend eligibility for child care for a minimum of 12 months regardless of a parent's temporary change in employment or participation in education or training. See U.S. Department of Health and Human Services (2015). This policy change lowers the number of recertifications that are required within a year.

An important question for the behavioral policy field is whether solutions that have been designed for a particular program can be expanded to others — either the same program in a new place or a different program that faces similar challenges. There have been both successful and unsuccessful examples of replication and scale-up.[12] In BIAS, two replications were conducted in the form of adaptations of prior tests. The main lesson from those replications was that some behavioral mapping was required in the new setting, although it was faster and more streamlined than in the first instance. Behavioral diagnosis was generally focused on three key features of the new program: motivating or de-motivating factors (economic or political reasons that administrators, staff, clients, and relevant external actors might or might not see positive effects of the intervention as beneficial), constraints (factors that limit the applicability of the proposed intervention), and opportunities (factors that might make the intervention simpler or more effective).

Once the team has determined whether the incentives and constraints are the same as in the prior context where extensive behavioral mapping occurred, they can focus on adapting the intervention with the goal of leveraging new opportunities. For example, two sets of BIAS tests were conducted in Ohio, with the second set in Cuyahoga County substantially replicating the first set in Franklin County. The interventions addressed a similar population of noncustodial parents and both aimed to increase child support payments. The team found that the incentives and constraints within the county systems were comparable, but there were some new opportunities. For example, the office in Cuyahoga County had the capacity to deliver text messages and was willing to include messages about the importance of making partial payments if the client could not make a full payment.

CONCLUSION

If behavioral diagnosis and design is to become a regular part of government's continuous program improvement efforts, the operational context of programs will need to be adapted to that purpose. More flexible technological infrastructure will be needed, along with 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. These basic ingredients support the complex and difficult task of engaging in creative problem-solving work using the lens and tools provided by behavioral science, either with the help of outside consultants or led by internal staff. Despite the many challenges that arose when conditions were not ideal, the BIAS team was able to implement most tests, and all sites had at least one test with positive impacts on a primary measure of interest. This result suggests that much can be accomplished in client-level interventions in spite of the operational limitations of the organizations that implement and run programs.

[12] For example, Madrian and Shea (2001) and Choi, Laibson, Madrian, and Metrick (2004) have demonstrated the impact of default enrollment on savings behavior in the context of the 401(k) retirement plan. However, Bronchetti, Dee, Huffman, and Magenheim (2013) found no effects of default enrollment for low-income savers.

Expert Commentary

A County's Perspective

Susan A. Brown

Director, Franklin County Child Support Enforcement Agency

Franklin County Child Support Enforcement Agency is a state-supervised, county-administered metropolitan child support program located in Columbus, Ohio. The Agency was pleased with the overall outcomes of the BIAS study, which improved the payment rates of parents who do not have wage withholding orders in Franklin County. As a result of the study, we learned that $350,000 more was collected from 13,095 parents in the intervention group than was collected from the control group. Any additional payment is meaningful from the perspective of the parents and children receiving these additional payments into their household. The BIAS team's impact estimate, however, was not statistically significant.

The child support program is one of the most performance- and data-driven programs within human services. As such, and as this report points out, the BIAS team was able to make substantial use of quantitative data that the Agency had available during the diagnosis phase, which increased the ability to home in on a very specific population of noncustodial parents. Most data were obtained locally within the county; however, certain data for the project had to be derived from Ohio's Support Enforcement Tracking System, which was more time-consuming.

Although the site implementation team consisted of managerial staff, the BIAS study in Franklin County provided the opportunity for staff members at every operational level of the organization to be truly involved. Their participation increased their acceptance of the behavioral concepts. The Agency initially held a meeting with the staff to introduce them to the field of behavioral economics, how it has been used in sectors of government and in the private sector for years, and what specifically the Agency was attempting to accomplish. Since the Agency did not have an automated way to fold, stuff, and seal the payment reminder letters used in the BIAS study, staff members mobilized to get the letters sent out to clients manually. Staff saw firsthand the behaviorally modified payment notices, so they felt like they were contributing to an overall effort to change the way they interact with families, and they began to understand Agency processes from the client's point of view.

The Agency also heard from a fair number of clients who appreciated the reminders and the prepaid-postage return envelopes. Beyond that, Franklin County benefited from getting updated address information from many of the clients; explanations or reasons for nonpayment, such as medical issues; and updated employer information. The staff reported increased call volume from noncustodial parents who were involved in the study, who had long stopped communicating.

This pilot provided the Agency with a great deal more than the basics of behavioral diagnosis and design. It has contributed to the way we think about service delivery, our processes, and our clients. Franklin County has now taken behavioral economics to the next level by participating in the federal Office of Child Support Enforcement's Behavioral Interventions in Child Support Services project. The Agency looks forward to reporting those findings.

Nudging Change In Human Services

6 Can Behavioral Science Help to Achieve Large-Scale Goals?

The concluding chapter of this report focuses on the overarching lessons of the Behavioral Interventions to Advance Self-Sufficiency (BIAS) project, implications for large-scale goals, and future directions for behavioral science in public policy. It covers the process of identifying leverage points within programs where the application of behavioral insights could improve the system, and provides a framework for designing different types of behavioral interventions — from small-scale nudges to policy restructuring. A commentary by Marianne Bertrand, Chris P. Dialynas Distinguished Service Professor of Economics at the University of Chicago Booth School of Business, follows the chapter.

THE VALUE OF SMALL CHANGES

Human services programs within the Administration for Children and Families (ACF) are designed to promote economic and social well-being for low-income families. The BIAS project was launched to improve the efficacy and operations of these programs to ensure that they are meeting this ultimate goal. Through the types of behavioral interventions designed under the project, participants were more likely to follow the intended course of action and complete requirements that were necessary for ACF to meet its goal of effectively serving vulnerable families.

The BIAS project's results show that small changes to the way information is presented can affect the way people respond. These changes helped clients follow through on their intentions, through reminders and implementation prompts; ensured that they were informed about and understood their options by simplifying information; and encouraged clients to consider the long-term implications of the decisions they make today in order to overcome present bias.

The findings also demonstrate the impact that behavioral interventions can have on the lives of low-income populations. When taken in isolation, it may seem trivial that a working mother has to make only one trip to renew her child care voucher instead of two, but stepping back to understand the larger complexities puts the impact in a different perspective. The same working mother may also receive other government benefits that require her to submit documentation and take time off from work to attend appointments. She likely spends hours gathering her required documents and providing information that the agency already has on file. In the context of the inconsistent work hours that typify low-wage jobs, she has to find coverage for her work slot in order to attend her appointment (or risk losing her shift and being unable to pick up another), ob-

tain transportation to get to the office, and secure child care. Just when she has reauthorized one benefit, it may be time to tackle these hurdles for the next.

The offices are typically open from 9:00 A.M. to 4:00 P.M., requiring her to take time out of her schedule to meet the complex requirements. If she has inconsistent work hours, she may have to go through the renewal process again in two months to prove she is still meeting the number of work hours that are required to receive the benefit. This scenario assumes that she is able to keep up with all of the demands that must be met in order to receive the benefit; research suggests clients stop receiving benefits for which they are eligible when the hassles become too difficult.[1]

Some human services programs deliberately incorporate detailed requirements, partly to ensure that those who are receiving the benefit are truly "in need." This approach can be a way to lower the number of people receiving the benefit.[2] These policies largely assume that those most in need of services will find a way to overcome the barriers to entry to access the program. As already mentioned, clients who are in need may not access programs if they are not able to overcome the hassles associated with applying for and maintaining those benefits.[3]

IMPLICATIONS FOR POVERTY ALLEVIATION

The BIAS project executed 15 randomized controlled trails in eight human services agencies, which permitted a broad view of how the behavioral diagnosis and design approach can be implemented across a number of problems in different contexts. At every turn of the project, the BIAS team recognized additional opportunities to modify communications, procedures, and requirements to improve agency processes. In order for behavioral science to contribute to progress toward meaningful social goals, behavioral science concepts may need to be fully institutionalized within the culture and brought to full scale.

Approaching problem solving using the behavioral diagnosis and design framework can aid in changing an agency's culture. As noted in Chapter 5, some staff members were excited by what they found through the behavioral diagnosis and design process, garnering cooperation at various levels. When agencies are committed, the behavioral diagnosis and design process can be a catalyst for bigger policy conversations and can point the way to change.

Applying behavioral insights to improve *program implementation* was a significant achievement of BIAS. These nudges — defined as subtle and modest changes that help improve individual decision making — are an important aspect of the behavioral toolkit, but there is more to explore. For example, principles from behavioral science can be integrated at two other critical stages beyond program implementation (the level of all the interventions in BIAS): *program design* (state or local

[1] Shlay, Weinraub, Harmon, and Tran (2004).

[2] Kleven and Kopczuk (2011).

[3] Bertrand, Mullainathan, and Shafir (2004); Mullainathan and Shafir (2013).

level) and *policy formulation* (federal or state level). Figure 6.1 illustrates a framework for incorporating behavioral insights at these three stages: program implementation, program design, and policy formulation. Illustrative examples are provided below.

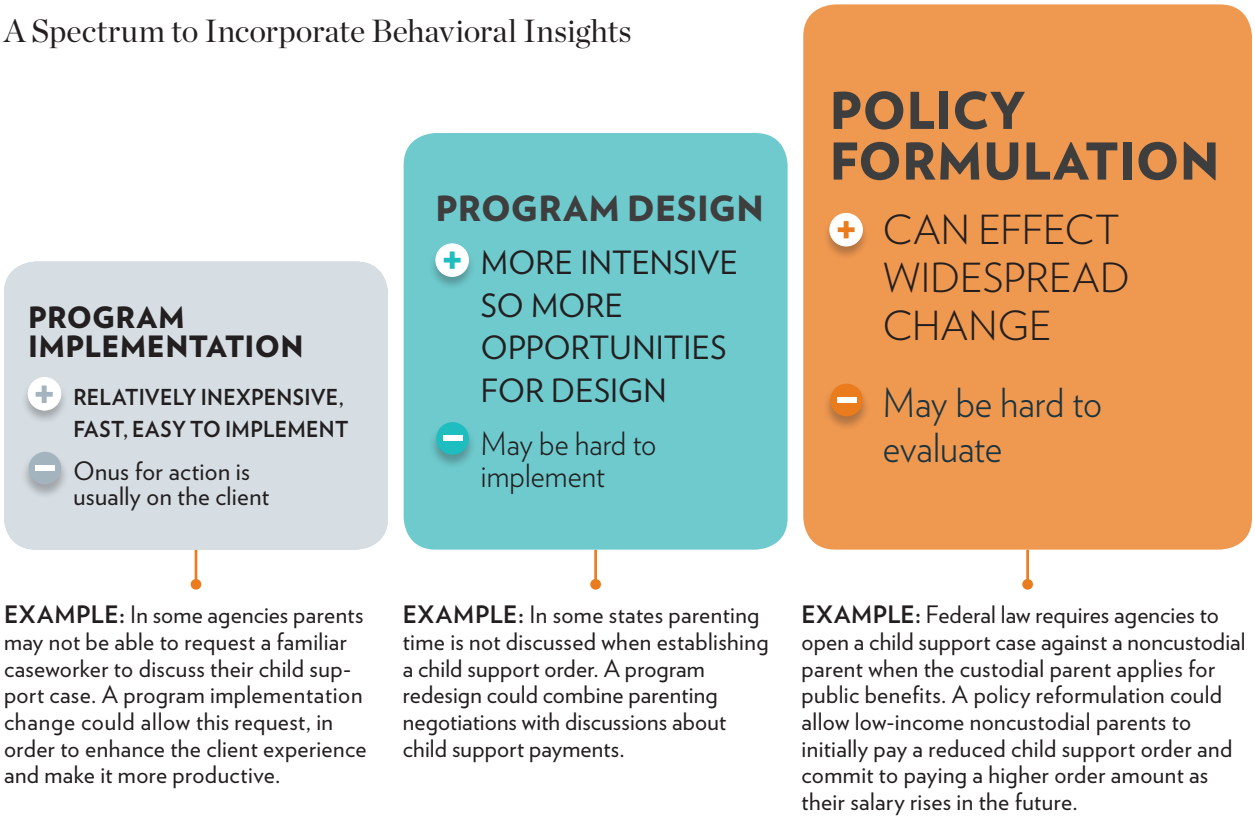
Policy Formulation

Behavioral research shows that all people succumb to behavioral biases — including policymakers who design programs, staff who implement them, and clients who participate in them. Federal policymakers often design human services programs based on their subjective beliefs — and those of legislators, lobbying groups, and advocacy groups — about the needs of the population. Then, states and local agencies carry out the specific requirements, implementing a program in ways that may deviate from the original design as policies are interpreted by workers who engage more closely with clients.

The complexity of a policy can snowball — each decision in isolation might be justifiable, but when taken as a whole can run into a series of hurdles and bureaucracy that impede clients' ability to navigate the system. There is rarely reconciliation between the original policy design and actual implementation. For example, a law was enacted to remove barriers that homeless youth face in ac-

FIGURE 6.1

A Spectrum to Incorporate Behavioral Insights



cessing financial aid, given that they struggle to provide required parental information to complete the application. In practice, this has often led to homeless youth having to provide *additional* documentation to financial aid administrators to offset the fact that they do not have parental information, such as paperwork to prove a change in their housing situation that resulted in homelessness, actually further complicating their ability to complete the process.[4] These complications exist in spite of the work that the federal government has done to simplify the Free Application for Federal Student Aid — as behavioral research has demonstrated the benefits of simplifying this form — illustrating the gap at times between policy design and implementation.[5]

In another example, federal law requires that when a single parent with custody of a child applies for public benefits, the agency must open a child support case and usually must seek to recoup some of the benefits to the state from the other parent who does not have custody. This is a rational program design in cases where the noncustodial parent has sufficient means to assist the custodial parent in raising the child. However, in reality, many cases are opened against low-income noncustodial parents. If these noncustodial parents do not participate in or are not aware of the process, they can end up with orders beyond their means to pay, leading to large amounts of debt, increasing levels of penalties that include suspension of their driver's license, and even incarceration, reducing their ability to pay. States must then spend time, resources, and money in mostly unsuccessful attempts to collect the debts they are owed.[6]

As one example of how this policy could be revisited from a behavioral perspective, noncustodial parents could enter a payment plan where they initially owe a lower percentage of their earnings. The amount they owe would then increase over one year. This gradual increase may make the task seem less unpleasant, potentially increasing the likelihood they would follow through. This would be similar to the Save More Tomorrow (SMarT) program, a behavioral intervention that has people commit in advance to allocating a portion of their future salary increases toward retirement savings.[7] This type of design would acknowledge that self-control and procrastination play key roles in shaping the way people think about their finances. While a host of issues are involved in designing and executing such an idea in practice, the example illustrates broader creative thinking about the role of behavioral interventions and the possibilities for policy design.

[4] The College Cost Reduction and Access Act of 2007 (P.L. 110-84) expands the definition of "independent student" in the Free Application for Federal Student Aid (FAFSA). Verification must be made by one of the following: (1) a McKinney-Vento Act school district liaison; (2) a U.S. Department of Housing and Urban Development homeless assistance program director or his/her designee; (3) a Runaway and Homeless Youth Act program director or his/her designee, or; (4) a financial aid administrator. See Federal Student Aid (2016); National Association for the Education of Homeless Children and Youth (2014).

[5] Bettinger, Long, Oreopoulos, and Sanbonmatsu (2012); Council of Economic Advisers (2009).

[6] Office of Child Support Enforcement (2014); Solomon-Fears, Smith, and Berry (2012).

[7] Thaler and Benartzi (2004).

Program Design

Like many human services programs, the child care, child support, and Temporary Assistance for Needy Families programs are designed so that state agencies have some discretion about how to implement them. States mandate laws in order to comply with the federal guidelines while meeting their own goals. These state policies offer opportunities to incorporate behavioral insights that keep the clients' needs and perspectives at the center, ensuring that the program is set up to best assist the people it is designed to help.

For example, in some states the amount of time that each parent is legally entitled to spend with his or her child, or "parenting time," is not discussed when establishing a child support order for never-married parents, and requires a separate legal proceeding outside of the child support process. Further, under current law, child support agencies cannot use federal funds to pay for services related to parenting time, such as mediation.[8] These rules and regulations can be frustrating for parents who are obligated to pay support orders but may not be able to visit with their children because of disagreements with the custodial parent. Noncustodial parents may experience a *negative affect* — unpleasant emotions that exist on a continuum from normal to extreme feelings of sadness, fear, and anger — that may result in decreased compliance with payment obligations.[9] One example of how a behavioral approach might address this problem is by combining parenting negotiations with discussions about child support payment obligations.[10]

Program Implementation

The BIAS project focused largely on improving the implementation and efficacy of human services programs. Once policies are formulated and programs are designed, agencies must make a series of evolving and ongoing decisions that affect program operations on a daily basis. For example, staff members who are working for government agencies or service providers may be handling large caseloads, which may give them an incentive to handle their workload in a different manner from the one intended. Staff members who do not have the information that their clients need might direct their clients to another agent but may not consider the potential effect on the client when the next staff member also does not have the needed information. In short, the organizational behavior of the office has implications for the clients that the office is designed to serve. Investments in technology could help staff better use their time by synchronizing data across offices,

[8] For divorced parents, parenting time is determined as part of the divorce proceedings.

[9] A study of programs in four states shows that payments are higher among noncustodial parents who have visitation rights. See Office of Child Support Enforcement (2013).

[10] Such negotiations also need to ensure the safety of families that are at risk of domestic violence. While it is not possible to use child support funding to establish the linkage between parenting time negotiations and child support payment obligations because states are not permitted to use Title IV-D funds to pay for parenting time services, some states and counties have developed partnerships that permit the determination of both at the same time. See Office of Child Support Enforcement (2013) for details of four such programs, most of which are supported through partnerships with courts or other agencies.

making it easier for staff and clients to access records that would help smooth the process. Office managers and staff can also use techniques from behavioral diagnosis and design (discussed in Chapter 2) to take a step back to think about ways to incorporate these principles into their day-to-day operations.

For example, in some agencies, parents may visit the child support office once and see a caseworker to discuss their case. The next time they come in, they may request the same staff member because they have already discussed their arrangement with that person and developed a relationship. However, the office may have a policy that parents cannot request certain staff members because of the need to balance workloads and wait times. While this policy may make sense from a scheduling perspective, it may interfere with building a relationship with noncustodial parents and ensuring that they make timely payments to the custodial parent. As agencies make trade-offs with limited resources, behavioral diagnosis, design, and testing can reveal the effects of those trade-offs.

A FRAMEWORK FOR MOVING BEYOND NUDGES

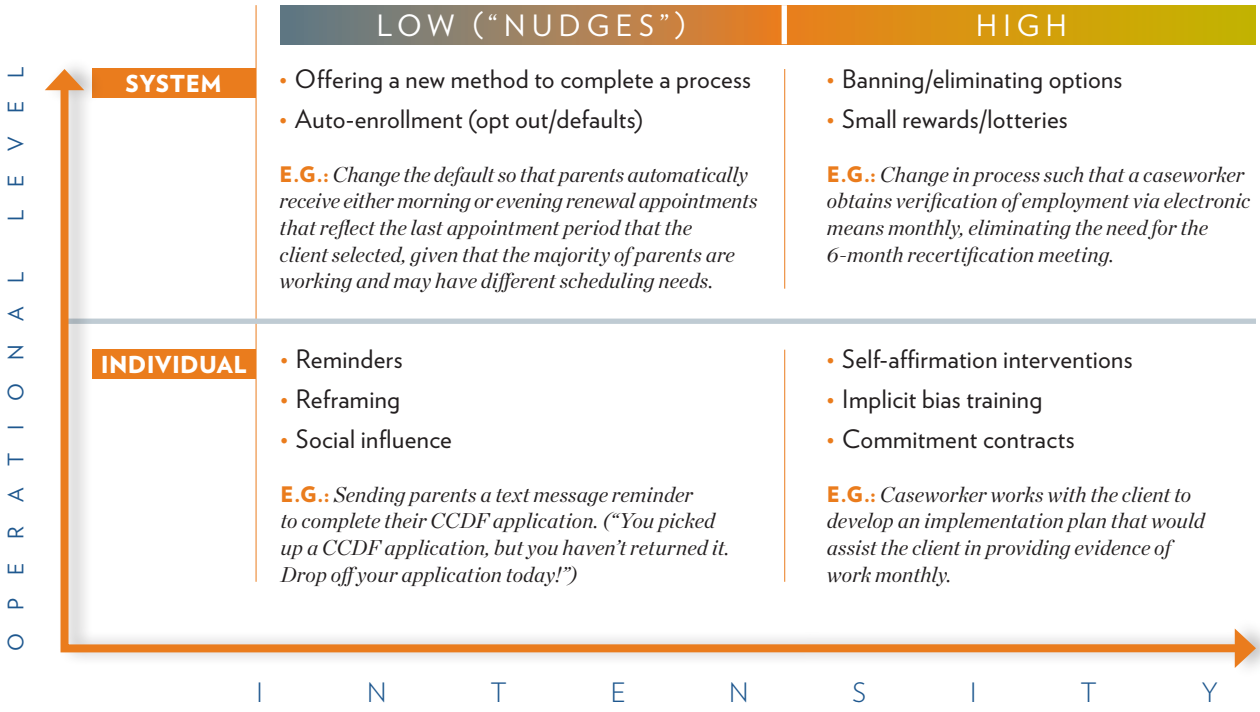
Behavioral interventions at the stages of policy formulation and program design represent moves toward larger system changes. Another way that the intensity of behavioral interventions can be increased is by moving beyond nudges like communication changes. Figure 6.2 is a framework for incorporating behavioral interventions along two dimensions — the level of operation and the level of intensity. The figure demonstrates one way to think about different types of behavioral interventions that may be effective at improving a program or policy. The Child Care and Development Fund (CCDF) subsidy is used here to illustrate how this framework can be applied.

Level of Operation

Interventions can operate at the *individual* or at the *system* level, as shown in Figure 6.2. Individual interventions are designed to change behavior by focusing on an individual's thoughts, feelings, or motivations in ways that increase the likelihood of a particular course of action. These interventions can be designed to produce immediate, short-term behavior changes, though they are often intended to create long-lasting changes in the way individuals think and feel in situations they encounter regularly.

By comparison, system interventions are designed to change the pathway or organizational structure of a system, such as changing institutional practices, procedures, or regulations to encourage a particular action. System interventions have two key features: (1) they are typically designed to have an impact on the members of an entire population (staff, participants, or both) simultaneously in order to produce a net change in behavior; and (2) participants need only conform to the "rules" of the system (altered by the behavioral intervention) to produce a target behavior. For example, if the CCDF changed its procedures such that the caseworker was responsible for obtaining employment verification electronically, a family that was due for renewal would not need to do anything other than follow the "rules" in order to receive the child care voucher benefit. This scenario is

FIGURE 6.2 Examples of Behavioral Interventions with Illustrations from Child Care



an example of a system-level intervention. As discussed earlier, interventions such as these can lead to changes in individual thoughts, feelings, and motivations over time, although such changes may not be necessary to produce the desired behavior.

An example of an individual-level CCDF subsidy intervention is sending parents a text-message reminder to complete their CCDF application: "You picked up a CCDF application, but you haven't returned it. Drop off your application today!" On the other hand, a system-level intervention could change the default so that parents automatically receive renewal appointments — either morning or evening — that reflect what clients selected for the timing of theirlast appointment, given that the majority of parents are working and may have different scheduling needs.

Level of Intensity

Interventions can range from *low-intensity*, defined as the "mere nudges" originally described by Thaler and Sunstein, to *high-intensity* changes to choice architecture.[11] Interventions that remove options completely or create significant economic incentives are classified as high-intensity. The

[11] "Choice architecture" refers to 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. If people fail to decide to donate, the state will make a choice for them. See Thaler and Sunstein (2008).

defining feature of high-intensity interventions is that they are difficult to avoid *or* avoiding them requires more effort on the part of the individual.

For example, a low-intensity nudge intervention would be to simplify the application packet sent to parents to encourage them to renew their child care subsidy on time. A low-intensity intervention at the system level would consist of eliminating an application requirement so parents no longer need to provide paystubs when applying for a CCDF voucher (changing the process). In this case, the parent cannot avoid the intervention, as it affects everyone, but the change does not entail a greater effort for the individual parent. All of the BIAS interventions fall in the individual, low-intensity ("nudges") quadrant, though a few also fall in the system-level, low-intensity quadrant (specifically, the Indiana, New York, and Oklahoma studies).

LOOKING FORWARD

Policymakers are increasingly exploring strategies to leverage behavioral interventions. In 2015, an Executive Order encouraged the use of behavioral insights to better serve the American people;[12] "nudge units" have been created around the globe; and a report from The World Bank focused on using behavioral insights to address policy challenges.[13] In light of the BIAS project's achievements, the Office of Child Support Enforcement within ACF launched its own behavioral project, called the Behavioral Interventions for Child Support Services. Led by MDRC, the project is focused on further exploring behavioral solutions within child support services, including some of the examples discussed in this chapter.

ACF is also expanding the human services program areas on which behavioral science has an impact through the BIAS Next Generation project, an illustration of how behaviorally informed projects will continue to expand in scope and intensity as the field evolves. In partnership with ACF, MDRC will continue to explore and improve the application of these principles to help low-income populations in the United States through this next version of the BIAS project. The team expects to test interventions that are a mix of changes to the messaging and communications strategy targeted to individuals, as well as changes to process and policies at the system level. In this way, BIAS Next Generation will move toward interventions that influence a group (such as a family, work unit, or agency) and track the effects on longer-term outcomes of interest, continuing to build on the successful approach and positive findings induced by the BIAS project.

[12] Exec. Order No. 13707 (Sept. 15, 2015).

[13] National Science and Technology Council (2015); World Bank (2015).

Expert Commentary

Nudges Are a Lower Bound of What Can Be Accomplished with Behavioral Science

Marianne Bertrand

Chris P. Dialynas Distinguished Service Professor of Economics, University of Chicago Booth School of Business

The BIAS project offers overwhelming evidence that insights from the behavioral sciences can be successfully leveraged to improve access to human services among the poorest and most vulnerable families in the United States. While the levels of the effects of the nudge-type interventions studied in the project are quantitatively modest overall, because they correspond to "nano-sized" investments, the returns are impressive. While the private sector has been a long-time, avid user of behavioral "tricks" such as those embedded in the BIAS project, it is refreshing to finally see those same insights leveraged systematically by the social sector to improve the implementation of public policy.

The 15 tests performed under BIAS only scratch the surface of the positive transformation that could be achieved by a redesign of human services programs that would be more closely aligned with the findings of the behavioral sciences. Insights from social psychology, for instance, have been slower in making their way into the behavioral economics agenda, which has been historically more grounded in the "heuristics and biases" subfield of cognitive psychology. For example, decades of experimental work in a laboratory setting have demonstrated the power of social norms, social influences, and social identity in driving the choices that we make. While likely going beyond the small-size investments described in this report, interventions that are aimed at social identity change or the internalization of new norms deserve to play a more central role in the application of behavioral sciences to public policy. Moving into even larger-size investments, recent work has shown how interventions that are grounded in cognitive behavioral therapy and clinical psychology can benefit individuals in need and hence should also be considered as potential add-ons to standard public policy.[1] Finally, psychologists have taught us a lot about how to motivate people, and why the standard incentive schemes described in a microeconomics textbook may fail or even backfire; this knowledge could be further embedded in the design of social programs.

[1] See, for example, Heller et al. (forthcoming).

Put in other words, the focus on small changes that has been made popular by Sunstein and Thaler's book *Nudge* may counterproductively restrain how we are currently conceiving of importing behavioral sciences insights into the formulation of public policy. Such an extension of the behavioral "toolbox" seems particularly important to me as we aspire to induce longer-term changes in behavior. Traditional nudges such as the ones studied in this report seem most effective when it comes to immediate, short-term behavioral changes, such as getting a recipient of Temporary Assistance for Needy Families (TANF) to attend a required meeting with a case worker. But transforming the life of TANF participants would require a more sustained behavioral change, which would likely need to come from a change in those participants' current- and future-self perceptions, and their beliefs and preferences.

Another reason why the work outlined in this report is a lower bound of what could be achieved with a more behaviorally founded public policy is that the focus is primarily on program participants, or program-eligible individuals. Yet, for most of the social policies under consideration, a successful implementation may be as much a function of the behavior of the staff members who are in charge of implementation as it as of the behavior of the participants. Indeed, these social workers are also subject to cognitive biases and limitations, have beliefs that may hinder their productivity, hold stereotypes (even if implicit) that may negatively spill over into the interactions they have with the families who rely on them, and so on. Nothing should stop policymakers and practitioners from applying the nudge agenda, or the broader behavioral agenda I outline above, to the program providers themselves.

Finally, economists remain too central to the design of behaviorally inspired public policy, and this need may limit the creativity, and ultimately the efficacy, of this general line of work. In many regards, behavioral economics is an unfortunate name for a research agenda whose main point is to demonstrate that psychology, and not just economics, should be central to the way we think about designing programs and interventions for maximum impact. More progress can be achieved only with stronger collaboration between economists and psychologists. This means that economists must be willing to cede some ground in their role as advisers to policymakers; it also means that a larger and more diverse group of psychologists must be willing to start considering the field as legitimate as the laboratory for testing interventions.

Nudging Change In Human Services

Appendixes

Appendix A

Supplementary Tables

APPENDIX TABLE A.1

Summary of BIAS Sites Participating in Behavioral Diagnosis Only (No Testing)

Domain	Site	Population	Problem
Domestic Violence	National Domestic Violence Hotline	Hotline callers	High call-abandonment rate
Child Care	Maine	Families applying for subsidies	Low take-up of quality-rated providers
	Kentucky	Child care providers and low-income parents	Low program take-up
TANF/ Income Support	Chicago, Illinois	TANF recipients	Low job-search activity
	New York, New York	TANF recipients	Reducing client electronic benefit transfer (EBT) card replacement
	Vermont	TANF recipients	Low participation in work activities and transitional benefits
Child Support	Missouri	Noncustodial parents receiving TANF	Low take-up of quality-rated providers

Note: TANF = Temporary Assistance for Needy Families.

APPENDIX TABLE A.2 Examples of Behavioral Interventions

Rank	Type	Frequency	Example
1	Reminders	73 papers, appearing in 6 domains	A regular text-message reminder to save money and increase savings balances by 6 percent. ***Karlan, McConnell, Mullainathan, and Zinman, 2016***
2	Social influence	69 papers, appearing in 8 domains	Homeowners received mailers that compared their electricity consumption with that of neighbors and rated their household as great, good, or below average. This led to a reduction in power consumption equivalent to what would have happened if energy prices had been raised 11-20 percent. ***Allcott, 2011***
3	Feedback	60 papers, appearing in 5 domains	A field experiment provided individualized feedback about participation in a curbside recycling program. Households that were receiving feedback increased their participation by 7 percentage points, while participation among the control group members did not increase at all. ***Schultz, 1999***
4	Channel and hassle factors	43 papers, appearing in 8 domains	Providing personalized assistance in completing the Free Application for Federal Student Aid (FAFSA) led to a 29 percent increase in two consecutive years of college enrollment among high school seniors in the program group of a randomized controlled trial, relative to the control group. ***Bettinger, Long, Oreopoulos, and Sanbonmatsu, 2012***
5	Micro-incentives	41 papers, appearing in 5 domains	Small incentives to read books can have a stronger effect on grades than incentives to get high grades. ***Fryer, Jr., 2010***
6	Identity cues and identity priming	31 papers, appearing in 3 domains	When a picture of a woman appeared on a math test, female students were reminded to recall their gender. ***Shih, Pittinsky, and Ambady, 1999***
7	Social proof	26 papers, appearing in 5 domains	Phone calls to voters with a "high turnout" message—emphasizing how many people were voting and that that number was likely to increase—were more effective at increasing voter turnout than a "low turnout" message, which emphasized that election turnout was low last time and likely to be lower this time. ***Gerber and Rogers, 2009***
8	Physical environment cues	25 papers, appearing in 5 domains	Individuals poured and consumed more juice when using short, wide glasses than when using tall, slender glasses. Cafeterias can increase fruit consumption by increasing the visibility of the fruit with more prominent displays, or by making fruit easier to reach than unhealthful alternatives. ***Wansink and van Ittersum, 2003***
9	Anchoring	24 papers, appearing in 3 domains	In New York City, credit card systems in taxis suggested a 30, 25, or 20 percent tip. This caused passengers to think of 20 percent as the low tip even though it was double the previous average. Since the installation of the credit card systems, average tips have risen to 22 percent. ***Grynbaum, 2009***
10	Default rules and automation	18 papers, appearing in 4 domains	Automatically enrolling people into savings plans dramatically increased participation and retention. ***Benartzi and Thaler, 2004***
11	Public/private commitments	11 papers, appearing in 4 domains	When people promised to perform a task, they often completed it. People imagine themselves to be consistent and will go to lengths to keep up this appearance in public and private. ***Bryan, Karlan, and Nelson, 2010***

Note: As part of a scan of the literature, the BIAS team reviewed studies in the larger field of behavioral science that developed and applied behavioral interventions in eight domains: charitable giving, consumer finance, energy/environment, health, marketing, nutrition, voting, and workplace productivity. The review focused primarily on field studies rather than lab experiments. This table shows the top 11 interventions that were widely cited in 291 studies. For more information, see Richburg-Hayes et al. (2014b).

Appendix B

BIAS Project Summaries

Child Care: Indiana—Provider Choice

DEFINE.

Low-income parents who are working or attending school can apply for a Child Care and Development Fund (CCDF) subsidy to offset some of their child care costs. To assist parents in selecting a provider, Indiana created a voluntary Quality Rating and Improvement System called Paths to QUALITY (PTQ). PTQ ranks providers on a four-point scale based on their achievement of standards related to health and safety, staff qualifications, parental engagement, and curriculum development. However, not all child care providers that are eligible to receive CCDF subsidies participate in PTQ. About one-third of CCDF parents in Indiana do not choose PTQ providers. The BIAS study aimed to increase the percentage of CCDF parents who selected a PTQ provider at the time of enrollment, and to increase selection of the highest-rated providers within this group.

DIAGNOSE & DESIGN.

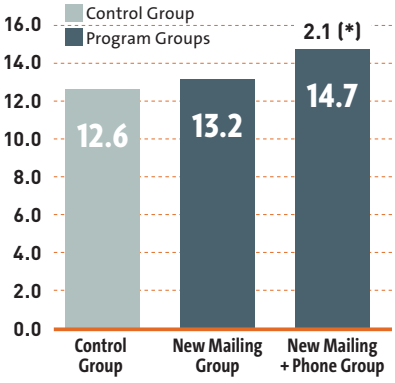
The team examined the process of choosing a child care provider among parents who were placed on a waiting list for the CCDF subsidy. The team identified several bottlenecks: (1) parents may not be aware of, or understand, the quality-ratings program; (2) they may not begin their search for a child care provider while still on the waiting list, when they likely have more time to consider options; and (3) when parents are called off the waiting list, they have limited time to choose a provider.

The BIAS team, assisted by the Indiana Association for Child Care Resource and Referral (IACCRR), replaced a letter and brochure that the state routinely sent to parents on the CCDF waiting list with a new, behaviorally informed mailing. The new mailing included individualized referrals to child care providers near the parent's home, shown on a map, along with graphics displaying the levels of quality and the benefits of choosing a PTQ provider. Some parents also received a proactive phone call from an IACCRR agent to explain the PTQ program and provide additional referrals.

TEST & FINDINGS.

Participants were randomly assigned to one of three groups: (1) a program group that was sent the new mailing and received a proactive phone call (n = 2,415); (2) a program group that was sent the new mailing only (n = 3,580); or (3) a control group that was sent the agency's existing marketing materials (n = 6,657). The interventions did not increase the overall percentage of CCDF families who chose any quality-rated provider. However, the new packet combined with a phone call increased the percentage of families who chose a highly rated provider (Level 3 or 4) by 2.1 percentage points, from 12.6 percent to 14.7 percent (a statistically significant difference). There was also evidence that this intervention was more effective when parents received the referrals and phone call closer to the time when they signed up for the CCDF waiting list rather than closer to the time when they actually received their subsidies, which could be months later.

SELECTED HIGH QUALITY-RATED PROVIDER (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

The findings from this study of child care provider choice offer some support for the conclusion that parents who are making complex child care decisions with limited time may benefit from personal assistance delivered at a time when they are open to considering new child care arrangements. In this case, that time seems to be when parents sign up for a subsidy rather than closer to the time when they receive the subsidy.

FOR MORE DETAILS, SEE THE FULL REPORT:
Cutting Through Complexity: Using Behavioral Science to Improve Indiana's Child Care Subsidy Program

OPRE mdrc BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project was the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States.

Child Care: Indiana—Redetermination

DEFINE.

Indiana requires parents to periodically document their continued eligibility for child care subsidies. The goal of the BIAS intervention, designed in collaboration with the Indiana Office of Early Childhood and Out of School Learning, was to reduce the number of appointments needed to complete the subsidy redetermination process and increase the number of parents renewing on time.

DIAGNOSE & DESIGN.

Collecting the right documentation to complete redetermination can be difficult, and proof of employment can be especially hard to establish because of state verification requirements. In addition, the state did not send a reminder to parents about their upcoming renewal appointment, so they may have forgotten to attend.

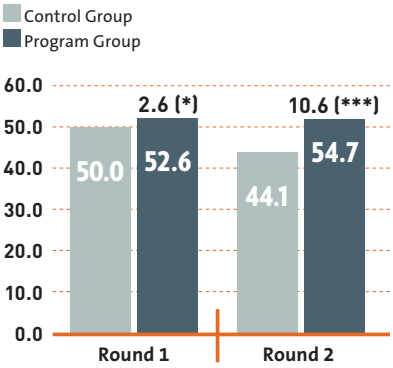
The BIAS team launched two rounds of evaluation. The first round assessed an intervention focused on simplifying the renewal letter and checklist that the state normally sent to parents, along with mailing a reminder about their upcoming appointment date. A second intervention, which was informed by data from the first round of evaluation, focused on providing parents with more detailed information and forms explaining how to show that they were meeting their work requirement, in addition to providing a more personalized reminder.

TEST & FINDINGS.

Participants were randomly assigned either to the program group, which received new, behaviorally informed, simplified materials and a reminder (n = 2,666, Round 1; n = 2,365, Round 2), or to the control group, which received the state's standard materials (n = 2,666, Round 1; n = 2,367, Round 2).

In Round 1, parents who received simplified renewal instructions were 2.6 percentage points more likely to attend their first scheduled renewal appointment (52.6 percent vs. 50.0 percent), and 3.2 percentage points more likely to complete the process in one appointment (62.5 percent versus 59.3 percent). The intervention did not produce a statistically significant change in the number of parents renewing by the deadline. In Round 2, the redesigned intervention materials increased the percentage of parents who attended their first scheduled appointment by 10.6 percentage points (from 44.1 percent to 54.7 percent). It did not change the likelihood that parents completed redetermination in one appointment, but it did increase the percentage of parents who renewed on time by 2.7 percentage points (from 76.4 percent to 79.1 percent).

FAMILIES ATTENDING 1ST SCHEDULED RENEWAL APPOINTMENT (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

Behavioral interventions can increase the number of eligible parents who renew their child care subsidies on time or meet other renewal milestones. The study findings may also point to a tension between getting parents to complete the process in one appointment, and reaching parents who may need more help gathering the complete documentation and renewing on time. In Round 2, behavioral messaging increased the percentage of parents who *attended* at least one appointment, but not the percentage who *completed the process* in one appointment, as happened in Round 1.

FOR MORE DETAILS, SEE THE FULL REPORT:
Cutting Through Complexity: Using Behavioral Science to Improve Indiana's Child Care Subsidy Program

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Child Care: Oklahoma

DEFINE.

Oklahoma requires that families receiving child care subsidies document their continued eligibility periodically. Only about one-third of child care subsidy cases that are eligible for renewal each year in Oklahoma are renewed by the state's deadline. This intervention was designed in partnership with the Oklahoma Department of Human Services to increase the number of clients who renew their child care subsidies on time.

DIAGNOSE & DESIGN.

The BIAS team identified four potential factors that could hinder on-time renewal rates: (1) the renewal process and deadline are unclear to clients; (2) clients face challenges submitting the required documentation; (3) the renewal deadline is not reinforced; and (4) the renewal process does not communicate a sense of urgency.

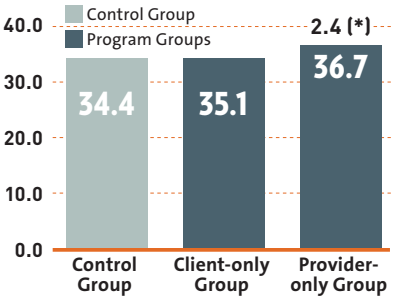
The team designed three interventions to improve outcomes: (1) a "provider intervention," which gave child care providers more information about their clients' renewal deadlines and prompted them to send reminders about and help clients with renewal; (2) a "client intervention," which used early and clear communication to clarify the renewal process and continual reminders to parents; and (3) a "combined intervention," which included both the client and provider interventions.

TEST & FINDINGS.

Clients were randomly assigned to one of four groups: (1) a provider-only group that did not receive the client intervention but whose providers received the provider intervention (n = 2,261); (2) a client-only group that received the client intervention but whose providers did not receive the provider intervention (n = 2,393); (3) a combined intervention group that received the client intervention and whose providers received the provider intervention (n = 2,283); or (4) a control group that was not exposed to any intervention on either the client or provider side (n = 2,411).

The provider intervention increased the client renewal rate before the renewal deadline to 36.7 percent, a statistically significant increase of 2.4 percentage points over the control group's 34.4 percent, at an estimated cost of $1.10 per provider per month. The client intervention, which cost about $1.00 per client, did not appear to improve on-time renewal, but it may have helped clients renew by the end of a 30-day grace period following the renewal deadline. Clients receiving the intervention showed a statistically significant 2.4 percentage point increase in renewals by the end of this grace period. Combining the client and provider interventions did not appear to be more effective than either intervention alone.

FAMILIES RENEWING CHILD CARE SUBSIDIES ON TIME (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

This study demonstrates that child care agencies can use behavioral insights to improve renewal process outcomes. The findings also suggest that behavioral strategies designed for staff and other service providers who work directly with clients sometimes produce greater impacts than focusing interventions directly on program participants. In this case, child care providers regularly interact with families at times when the benefits of the child care subsidy are likely to be most salient, making them a potentially powerful channel for improving child care subsidy system outcomes.

FOR MORE DETAILS, SEE THE FULL REPORT:
Engaging Providers and Clients: Using Behavioral Economics to Increase On-Time Child Care Subsidy Renewals

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The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project was the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States.

Child Support: Texas

DEFINE.

When parents who owe child support are incarcerated, they have limited ability to make payments, which can lead to the accumulation of significant child support debt. In Texas, these parents can apply for a modification to their child support order, which may reduce the amount they owe. The Texas Office of the Attorney General (OAG) Child Support Division had previously mailed information about this option to parents, but less than a third of them applied for a modification. The goal of the BIAS intervention was to increase the number of incarcerated parents owing child support who applied for a modification.

DIAGNOSE & DESIGN.

In order to successfully apply for a modification, parents need to open and understand the letter from the OAG, fill out an application and get it notarized by the law librarian, and submit the application. Participation can drop off at every step of the way. The BIAS team focused on several key bottlenecks early in the process: parents may avoid materials from the agency, believing they contain negative information; may be overwhelmed by the complexity of the information; or may intend to respond but forget.

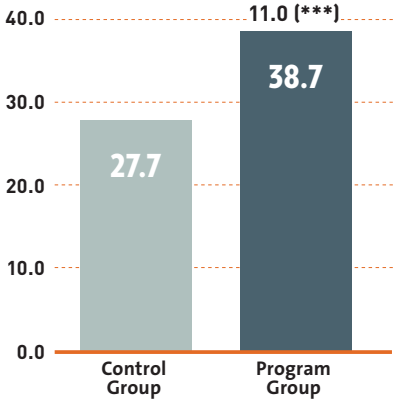
In order to address the identified bottlenecks, the team designed several changes to Texas's outreach. First, the OAG mailed a postcard to parents to increase their awareness about modifications, before they received the full packet of information. Second, the existing packet of information was drastically simplified and pre-populated with information the OAG had on file. Third, the OAG sent another postcard a few weeks after the packet was sent to remind those who had not yet responded.

TEST & FINDINGS.

Participants were randomly assigned to either the program group, which was sent the packet of behaviorally informed materials (n = 941), or to the control group, which was sent the standard OAG materials (n = 963).

The redesigned outreach increased the application completion rate to 38.7 percent, a statistically significant 11 percentage point increase over the control group's completion rate of 27.7 percent. The added behavioral components cost less than $2 per program group member.

SUBMITTED COMPLETE APPLICATIONS (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

The redesigned materials produced a statistically significant increase in the number of completed applications at relatively low cost. Program administrators hope that this is an important first step in a causal chain hypothesized to increase the likelihood that, on release, formerly incarcerated parents will resume supporting their children financially. A later BIAS study in Washington was conducted to partially replicate and build upon these findings.

FOR MORE DETAILS, SEE THE FULL REPORT:
Taking the First Step: Using Behavioral Economics to Help Incarcerated Parents Apply for Child Support Order Modifications

OPRE

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MEF ASSOCIATES

The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project was the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States.

Child Support: Washington

DEFINE.

When parents who owe child support are incarcerated, they have limited ability to make payments, which can lead to significant accumulation of child support debt. In Washington, these parents can apply for a modification to their child support order, which may reduce the amount they owe. However, the state does not have a systematic, agency-wide policy to inform incarcerated parents that they may be eligible for a modification. In collaboration with the Washington State Division of Child Support (DCS), this intervention aimed to increase the number of incarcerated parents owing child support who applied for and received modifications to their child support orders.

DIAGNOSE & DESIGN.

In order to successfully receive a modification, parents need to request the paperwork from DCS, fill out the application correctly, and submit the application to DCS. The BIAS team identified a few potential factors preventing a successful application: (1) parents may not know that a modification is possible; (2) parents may not understand the costs of inaction and thus consider the request for a modification a low priority; and (3) they may struggle to complete and submit the required paperwork, given the complexity of the forms and up-front costs in money and effort.

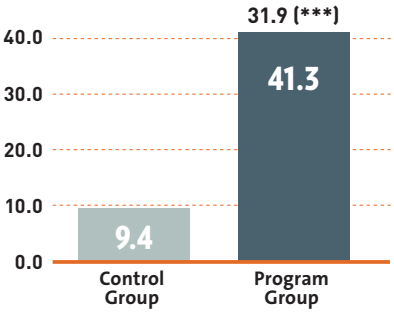
The team designed a sequence of behaviorally informed materials that provided incarcerated parents with a series of supports at different points in time to make them aware that they may be eligible for an order modification and to move them from intention to action. The materials included notifications and reminders through electronic messages, all the paperwork and a postage-paid return envelope needed to request a modification, and a tip sheet providing clear and succinct guidance on how to fill out the modification request.

TEST & FINDINGS.

Participants were randomly assigned to either the program group, which was sent the sequence of behaviorally informed materials (n = 411), or the control group, which continued receiving the status quo level of sporadic outreach (n = 416).

The intervention increased the percentage of parents requesting a modification from 9.4 percent to 41.3 percent, a statistically significant 31.9 percentage points. The intervention also resulted in a statistically significant 16 percentage point increase, from 2.3 percent to 18.3 percent, in the number of incarcerated parents actually receiving a modification to their child support orders within a three-month observation period. The estimated cost of sending the BIAS materials to the program group was $10.46 per program group member.

SUBMITTED APPLICATIONS (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

The statistically significant impact on requests for modifications echoes the results of a prior BIAS child support study in Texas, which also found impacts on requests for modifications. Furthermore, it builds on those results by demonstrating that behaviorally informed messaging can also increase the percentage of parents who actually receive modifications to their child support orders.

FOR MORE DETAILS, SEE THE FULL REPORT:
Simplify, Notify, Modify: Using Behavioral Insights to Increase Incarcerated Parents' Requests for Child Support Modifications

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The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project was the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States.

Child Support: Franklin County, Ohio

DEFINE.

For some parents who owe child support, a portion of their employment income is withheld automatically to cover part or all of those payments. But among parents whose income is not withheld, some do not make regular payments. The BIAS team, in collaboration with the Franklin County Child Support Enforcement Agency (Columbus, OH), evaluated interventions that aimed to increase the percentage of parents who made a payment on their own (among those whose income was not withheld), and to increase the dollar amount of total collections per parent.

DIAGNOSE & DESIGN.

The BIAS team identified several major bottlenecks that were potentially limiting payments: (1) parents may not be sent a reminder to pay; (2) if they are, they may not open or understand the reminder; (3) they may decide not to pay; and (4) they may decide to pay but fail to budget effectively, forget to pay, or encounter other obstacles.

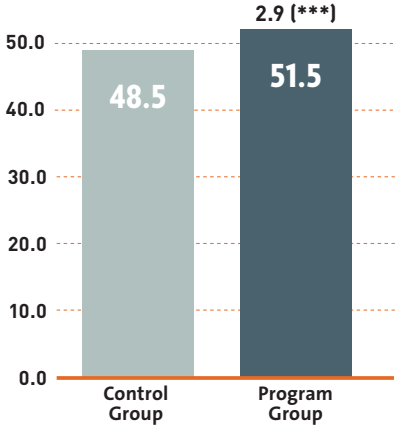
The team developed a variety of payment reminders that incorporated behavioral principles, including mailed notices and robocalls.

TEST & FINDINGS.

The team conducted two random assignment evaluations, of four months each. First, parents not already being sent reminders were split into five program groups, each given different combinations of reminders (total n = 13,095), and a control group that received no reminder (n = 2,620). The second evaluation targeted parents who were already being mailed monthly payment reminders. A new, behaviorally informed notice was sent to parents in a program group (n = 1,480), and the state's existing notice was sent to parents in a control group (n = 9,261).

The reminders in the first evaluation, on average, increased the number of parents who made at least one payment to 51.5 percent, a statistically significant increase of 2.9 percentage points over the 48.5 percent rate of the control group. However, there was no significant increase in total collections per person, suggesting that these additional payments were small. There were also no significant differences in the effectiveness of the various reminders that were evaluated. In the second evaluation, the redesigned payment reminder notice did not significantly increase the number of parents paying or the dollar amount of payments, compared with the existing state reminder notice. All of the reminders were low cost.

TEST 1: PARENTS MAKING A CHILD SUPPORT PAYMENT (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

Low-cost reminders produced a statistically significant increase in the percentage of parents making a child support payment. However, the additional payment amounts were not statistically significant, perhaps because some parents have a limited ability to pay and as a result would need more intensive interventions. Each reminder produced a similarly sized impact, suggesting that the form of the reminder in this case had little or no effect. A later BIAS study in Cuyahoga County, OH, was conducted to partially replicate and build upon these findings.

FOR MORE DETAILS, SEE THE FULL REPORT: Reminders to Pay: Using Behavioral Economics to Increase Child Support Payments

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The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project was the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States.

Child Support: Cuyahoga County, Ohio

DEFINE.

For some parents who owe child support, a portion of their employment income is withheld automatically to cover part or all of those payments. But when income is not withheld, some parents do not make regular payments. The BIAS team, in partnership with the Cuyahoga County Office of Child Support Services (Cleveland, OH), evaluated four interventions designed to increase the percentage of parents who made a payment (among those whose income was not withheld), and to increase the dollar amount of total collections per parent.

DIAGNOSE & DESIGN.

The BIAS team confirmed that the diagnosis from the BIAS study in Franklin County also applied in Cuyahoga County. The major bottlenecks were: (1) parents may not be sent a reminder to pay; (2) if they are, they may not open or understand it; (3) they may decide not to pay; or (4) they may decide to pay but fail to budget well, forget to pay, or encounter other obstacles.

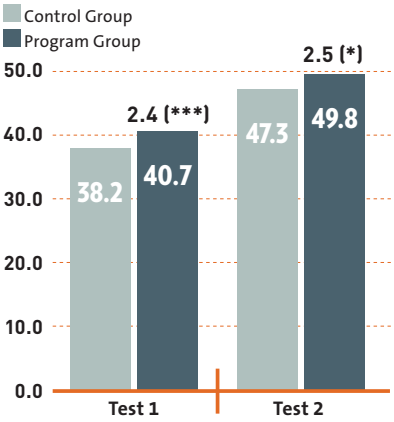
The team developed a variety of notices and text messages that incorporated behavioral insights.

TEST & FINDINGS.

The team conducted four random assignment evaluations, each lasting four or five months. First, parents without a cell phone number on file were either mailed a payment reminder notice (program group; n = 5,224) or continued to receive no reminder (control group; n = 5,180). Second, parents with cell phone numbers on file were sent text message reminders (program group; n = 3,156) or were mailed reminders (program group; n = 1,562), or received no reminder (control group; n = 1,604). The third evaluation targeted parents who were already being mailed monthly reminder notices. Parents were sent a new, behaviorally informed notice (program group; n = 4,668) or the state's existing notice (control group; n = 4,649). In the fourth evaluation, parents with newly established child support orders were sent a behaviorally informed welcome letter and payment reminders (program group; n = 536) or the county's existing materials (control group; n = 542).

In the first evaluation, reminders increased the number of parents who made a payment to 40.7 percent, a statistically significant increase of 2.4 percentage points over the control group's 38.2 percent. In the second evaluation, text messages increased the number of parents who made a payment to 49.8 percent, a statistically significant increase of 2.5 percentage points, over the control group's 47.3 percent, and were just as effective as the more costly reminders. But there was no significant increase in total collections per parent for either evaluation, and the interventions in the third and fourth evaluations had no significant impacts. All the interventions were low cost.

PARENTS MAKING A CHILD SUPPORT PAYMENT (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

Low-cost reminders produced statistically significant increases in the percentage of parents making a child support payments but the extra payment amounts were not statistically significant. There were no significant differences in impacts from using different reminders, although the optimal method may be text messages since they are the lowest cost. The findings reinforce those from the BIAS evaluation in Franklin County. While low-cost behavioral interventions such as reminders can improve some child support outcomes, more intensive interventions may be necessary to increase overall collections, perhaps because some parents have a limited ability to pay.

FOR MORE DETAILS, SEE THE FULL REPORT: Nudges for Child Support: Applying Behavioral Insights to Increase Collections

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The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project was the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States.

Work Support:
Los Angeles, California—TANF

DEFINE.

Some Temporary Assistance for Needy Families (TANF) recipients with young children in Los Angeles had previously been exempt from participating in the county's welfare-to-work program but lost this exemption in 2013 when state policy changed. The Los Angeles County Department of Public Social Services began scheduling appointments with formerly exempt parents to reengage them in the program. The county made at least four attempts via mail and phone to contact participants and inform them of the new requirements before the appointment, but many participants were still not attending the scheduled mandatory appointment. The goal of the BIAS intervention was to increase the number of TANF recipients who reengaged in the county's welfare-to-work program.

DIAGNOSE & DESIGN.

The team identified a number of barriers in the reengagement process: (1) reengagement notices may be complex and hard to understand; (2); recipients were used to receiving benefits without program participation requirements; (3) recipients may plan to attend a reengagement meeting and then forget or have trouble showing up for the meeting; (4) recipients may prioritize other needs; or (5) recipients may be concerned about succeeding in a program emphasizing work.

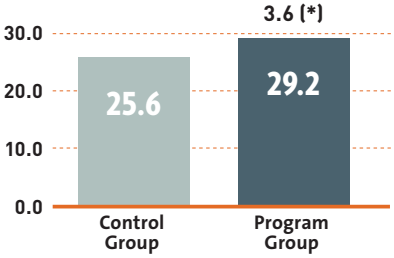
The team designed two different notices: one highlighted the losses participants might experience by not attending the reengagement appointment and the other highlighted the benefits they might receive by attending. Both notices also identically incorporated other behavioral techniques, including simplification, personalization, and implementation prompting. A sticky note with a personalized message to the participant was also attached to the notices.

TEST & FINDINGS.

Participants were randomly assigned to one of three groups: (1) a control group that received only the county's standard outreach (n = 814); (2) a program group that received the notice emphasizing the benefits of attending, plus the standard outreach (n = 814); or (3) a program group that received the notice emphasizing potential losses, plus the standard outreach (n = 814).

The evaluation found that sending an additional behavioral message increased the percentage of program group members who engaged in the program within 30 days of their scheduled appointment to 29.2 percent, a statistically significant increase of 3.6 percentage points over the control group's rate of 25.6 percent. This increase was largely driven by the notice that highlighted potential losses, which showed a statistically significant 4.4 percentage point increase in engagement at 30 days, while the notice emphasizing potential gains, when compared with the control condition, did not produce a statistically significant impact at 30 days. No impacts were found for either group after 60 and 90 days. The additional outreach cost less than $2 per person.

POSITIVELY ENGAGED 30 DAYS AFTER SCHEDULED APPOINTMENT DATE (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

This intervention was added to a fairly intensive campaign to increase engagement among the target population. Given that this was one additional piece of mail on top of at least four other attempts to reach participants and convey the importance of participating, it is notable that it helped participants to engage earlier than they would have otherwise. Further research with larger samples in different contexts is needed to explore whether "loss messaging" is consistently more effective than "gain messaging" in encouraging participants to engage in activities.

FOR MORE DETAILS, SEE THE FULL REPORT: Framing the Message: Using Behavioral Economics to Engage TANF Recipients

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mdrc BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

MEF ASSOCIATES

The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project was the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States.

Work Support:
New York, New York—Paycheck Plus

DEFINE.

The Paycheck Plus Demonstration is evaluating whether offering single New Yorkers an earnings supplement on top of the existing earned income tax credit improves their economic well-being and encourages employment. Demonstration participants were given an invitation and an offer of $50 to attend an optional informational meeting about Paycheck Plus. The BIAS interventions aimed to increase the number of participants who attended.

DIAGNOSE & DESIGN.

The BIAS team identified three potential bottlenecks affecting attendance: (1) participants may mistrust or not understand materials explaining the meeting; (2) they may understand but decide not to attend; or (3) they may decide to attend, but forget or have trouble getting to the meeting because of "hassle factors."

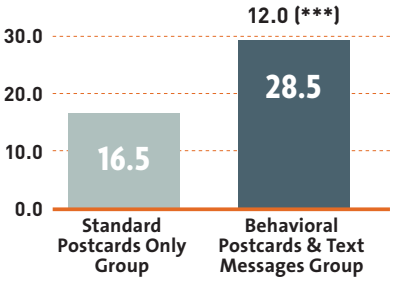
The team designed messaging for meeting invitations and reminders that incorporated behavioral concepts including implementation prompting, loss aversion, prominent deadlines, simplification, and the endowed progress effect (when people feel they have made progress toward their goals, they are more committed to achieving those goals). After the first round of meetings, the team designed a version of the informational meeting that could be delivered over the phone.

TEST & FINDINGS.

The team evaluated these interventions in two rounds. In Round 1, participants were randomly assigned to four groups: a control group that only received postcards with standard (not behavioral) messaging (n = 756); a program group that received postcards and text messages with standard messaging (n = 745); a program group that only received postcards with behavioral messaging (n = 740); and a program group that received postcards and text messages with behavioral messaging (n = 737). Round 2 included participants who did not attend a meeting during Round 1. All participants in Round 2 received behaviorally informed communications, but they were randomly assigned either to be invited to attend the meeting in person (n = 1,169) or to attend the meeting by phone (n = 1,162). This round assessed whether changing the format of the meeting increased participation.

In the first evaluation, the combination of behavioral postcards and text messaging produced the biggest impact and increased meeting attendance by 12 percentage points, a statistically significant change from 16.5 percent to 28.5 percent, compared with the lightest-touch approach of sending standard postcards alone (the control group). Both behavioral messaging compared with standard messaging, and adding text messages compared with postcards alone, produced statistically significant increases. In Round 2, participants in the phone group responded to the marketing materials more quickly than those in the in-person group, but in the end there was no statistically significant difference in response rates between the groups.

ROUND 1: ATTENDED MEETING (%)



NOTE: Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

CONCLUSION.

Behaviorally informed messaging produced a statistically significant increase in the percentage of participants who attended meetings in Round 1 and was most effective when a postcard was combined with text messaging. This finding reinforces the value of considering both the content and the delivery mode of outreach. The failure to find statistically significant impacts at the end of Round 2 when the meeting was offered by phone demonstrates the essential role of evaluation to determine the best ways of engaging various populations.

FOR MORE DETAILS, SEE THE FULL REPORT: The Power of Prompts: Using Behavioral Insights to Encourage People to Participate

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mdrc BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

The Behavioral Interventions to Advance Self-Sufficiency (BIAS) project was the first major opportunity to use a behavioral economics lens to examine programs that serve poor and vulnerable families in the United States.

Nudging Change In Human Services

References

REFERENCES

Adler, Paul S., and Brian Borys. 1996. "Two Types of Bureaucracy: Enabling and Coercive." *Administrative Science Quarterly* 41, 1: 61-89.

Allcott, Hunt. 2011. "Social Norms and Energy Conservation." *Journal of Public Economics 95*, 9-10: 1082-1095.

Allen, T. J., and R. Katz. 1986. "The Dual Ladder: Motivational Solution or Managerial Delusion?" *R&D Management* 16, 2 (April): 185-197.

Angner, Erik, and George Loewenstein. 2007. "Behavioral Economics." Social Science Research Network online document. Pages 641-690 in Uskali Mäki (ed.), *Handbook of the Philosophy of Science: Philosophy of Economic (2012)*. Amsterdam, The Netherlands: Elsevier.

Applebaum, Binyamin. 2015. "When Gas Becomes Cheaper, Americans Buy More Expensive Gas." *New York Times* (October 19).

Ariely, Dan, and Klaus Wertenbroch. 2002. "Procrastination, Deadlines, and Performance: Self-Control by Precommitment." *Psychological Science* 13, 3: 219-224.

Ashraf, Nava, Dean Karlan, and Wesley Yin. 2006. "Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines." *The Quarterly Journal of Economics* 121, 2: 635-672.

Bailyn, L. 1991. "The Hybrid Career: An Exploratory Study of Career Routes in R&D." *Journal of Engineering and Technology Management* 8, 1: 1-14.

Baird, Peter, Dan Cullinan, Patrick Landers, and Leigh Reardon. 2016. *Nudges for Child Support: Applying Behavioral Insights to Increase Collections*. OPRE Report 2016-01. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Baird, Peter, Leigh Reardon, Dan Cullinan, Drew McDermott, and Patrick Landers. 2015. *Reminders to Pay: Using Behavioral Economics to Increase Child Support Payments*. OPRE Report 2015-20. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Benartzi, Shlomo, and Richard H. Thaler. 2004. "Save More Tomorrow™: Using Behavioral Economics to Increase Employee Saving." *Journal of Political Economy* 112, S1: S164-S187.

Bertrand, Marianne, Sendhil Mullainathan, and Eldar Shafir. 2004. "A Behavioral-Economics View of Poverty." *American Economic* Review 94, 2: 419-423.

Beshears, John, and Francesca Gino. 2015. "Leaders as Decision Architects." *Harvard Business Review* (May): 52-62.

Bettinger, Eric P., Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu. 2012. "The Role of Application Assistance and Information in College Decisions: Results from the H&R Block FAFSA Experiment." *The Quarterly Journal of Economics* 127, 3: 1205-1242.

Bhargava, Saurabh, and Dayanand Manoli. 2015. "Psychological Frictions and the Incomplete Take-Up of Social Benefits: Evidence from an IRS Field Experiment." *American Economic Review* 105, 11: 3489-3529.

Blais, Etienne, and Jean-Luc Bacher. 2007. "Situational Deterrence and Claim Padding: Results from a Randomized Field Experiment." *Journal of Experimental Criminology* 3, 4: 337-352.

Bronchetti, Erin Todd, Thomas S. Dee, David B. Huffman, and Ellen Magenheim. 2013. "When A Nudge Isn't Enough: Defaults and Saving Among Low-Income Tax Filers." *National Tax Journal* 66, 3: 609-634.

Bryan, Christopher J., Gregory M. Walton, Todd Rogers, and Carol S. Dweck. 2011. "Motivating Voter Turnout by Invoking the Self." *Proceedings of the National Academy of Sciences*.

Bryan, Gharad, Dean Karlan, and Scott Nelson. 2010. "Commitment Devices." *Annual Review of Economics* 2: 671-698.

Cabinet Office Behavioural Insights Team. 2011. *Annual Update* 2010-2011. London: Cabinet Office Behavioural Insights Team.

Cadena, Ximena, and Antoinette Schoar. 2011. "Remembering to Pay? Reminders vs. Financial Incentives for Loan Payments." NBER Working Paper No. 17020. Cambridge, MA: National Bureau of Economic Research.

Camerer, Colin, and Taisuke Imai. 2016. "A Large-Scale, Interdisciplinary Meta-Analysis on Behavioral Economics Parameters." *Open Science Framework* (June 3). Berkeley, CA: Berkeley Initiative for Transparency in the Social Sciences (BITSS), University of California. Website: www.bitss.org/projects/a-large-scale-interdisciplinary-meta-analysis-on-behavioral-economics-parameters.

Camerer, Colin, and George Loewenstein. 2004. "Behavioral Economics: Past, Present, Future." Pages 3-15 in Colin F. Camerer, George Loewenstein, and Matthew Rabin (eds.), *Advances in Behavioral Economics*. Princeton, NJ: Princeton University Press.

Cardinal, L., Sim Sitkin, and C. Long. 2010. "A Configurational Theory of Control." Pages 51-79 in S. B. Sitkin, L. B. Cardinal, and K. M. Bijlsa-Frankema (eds.), *Control in Organizations: New Directions in Theory and Research*. Cambridge, England: Cambridge University Press.

Castleman, Benjamin L., and Lindsay C. Page. 2015. "Summer Nudging: Can Personalized Text Messages and Peer Mentor Outreach Increase College Going Among Low-Income High School Graduates?" *Journal of Economic Behavior & Organization* 115: 144-160.

Center for Social Development. 2014. "Treasury Awards $1 Million for CSD Retirement Savings Research." *CSD News* (October 9). Online document. St. Louis, MO: George Warren Brown School of Social Work, Center for Social Development, Washington University in St. Louis. Website: https://source.wustl.edu/2014/10/center-for-social-development-receives-1-million-treasury-grant-for-retirement-savings-research.

Chief Evaluation Office. n.d. "Behavioral Interventions for Labor Related Programs." *Current Study*. Washington, DC: United States Department of Labor. Website: https://www.dol.gov/asp/evaluation/currentstudies/7.htm.

Choi, James J., David Laibson, and Brigitte C. Madrian. 2009. "Reducing the Complexity Costs of 401(k) Participation through Quick Enrollment." Pages 57-82 in David Wise (ed.), *Developments in the Economics of Aging*. Chicago, IL: University of Chicago Press.

Choi, James J., David Laibson, Brigitte C. Madrian, and Andrew Metrick. 2004. "For Better or for Worse: Default Effects and 401(k) Savings Behavior." In David A. Wise (ed.), *Perspectives in the Economics of Aging*. Chicago, IL: University of Chicago Press.

Cohen, Jacob. 1977. *Statistical Power Analysis for the Behavioral Sciences*. New York: Academic Press.

Cotterill, Sarah, Peter John, Hanhua Liu, and Hisako Nomura. 2009. *How to Get Those Recycling Boxes Out: A Randomised Controlled Trial of a Door to Door Recycling Service*. Manchester, England: University of Manchester Institute for Political and Economic Governance.

Council of Economic Advisers. 2009. *Simplifying Student Aid: The Case for an Easier, Faster, and More Accurate FAFSA*. Washington, DC: Executive Office of the President, Council of Economic Advisers, National Economic Council.

Dechausay, Nadine, and Caitlin Anzelone. 2016. *Cutting Through Complexity: Using Behavioral Science to Improve Indiana's Child Care Subsidy Program*. New York: MDRC.

Dechausay, Nadine, Caitlin Anzelone, and Leigh Reardon. 2015. *The Power of Prompts: Using Behavioral Insights to Encourage People to Participate*. OPRE Report 2015-75. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

DellaVigna, Stefano. 2009. "Psychology and Economics: Evidence from the Field." *Journal of Economic Literature* 47, 2: 315-72.

DellaVigna, Stefano, and M. Daniele Paserman. 2005. "Job Search and Impatience." *Journal of Labor Economics* 23, 3: 527-588.

Edmondson, Amy. 1999. "Psychological Safety and Learning Behavior in Work Teams." *Administrative Science Quarterly* 44, 2: 350-383.

Falk, Gene, and Margot L. Crandall-Hollick. 2016. The Earned Income Tax Credit (EITC): *An Overview*. Washington, DC: Congressional Research Service.

Farrell, Mary, Caitlin Anzelone, Dan Cullinan, and Jessica Wille. 2014. *Taking the First Step: Using Behavioral Economics to Help Incarcerated Parents Apply for Child Support Order Modifications*. OPRE Report 2014-37. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Farrell, Mary, Jared Smith, Leigh Reardon, and Emmi Obara. 2016. *Framing the Message: Using Behavioral Economics to Engage TANF Recipients*. OPRE Report 2016-02. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Federal Student Aid. 2016. *Questions and Answers: Federal Student Aid and Homeless Youth*. Washington, DC: U.S. Department of Education. Website: https://studentaid.ed.gov/sa.

Feldman, Martha S., and Brian T. Feldman. 2003. "Reconceptualizing Organizational Routines as a Source of Flexibility and Change." *Administrative Science Quarterly* 48: 94-118.

Feldman, Martha S., and Brian T. Pentland. 2005. "Organizational Routines as a Unit of Analysis." *Industrial and Corporate Change* 14, 5: 793-815.

Forry, Nicole, Kathryn Tout, Laura Rothenberg, Heather Sandstrom, and Colleen Vesely. 2013. *Child Care Decision-Making Literature Review*. OPRE Brief 2013-45. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Fox, Justin. 2015. "From 'Economic Man' to Behavioral Economics." *Harvard Business Review* (May): 78-85.

Fryer, Jr., Roland G. 2010. "Financial Incentives and Student Achievement: Evidence from Randomized Trials." NBER Working Paper No. 15898. Cambridge, MA: National Bureau of Economic Research.

Fryer, Jr., Roland G., Steven D. Levitt, John List, and Sally Sadoff. 2012. *Enhancing the Efficacy of Teacher Incentives through Loss Aversion: A Field Experiment*. NBER Working Paper No. 18237. Cambridge, MA: National Bureau of Economic Research.

Garner, Randy. 2005. "Post-It Note Persuasion: A Sticky Influence." *Journal of Consumer Psychology* 15, 3: 230-237.

Gennetian, Lisa A., and Eldar Shafir. 2015. "The Persistence of Poverty in the Context of Financial Instability: A Behavioral Perspective." *Journal of Public Policy Analysis and Management* 34, 4: 904-936.

Gerber, Alan S., and Todd Rogers. 2009. "Descriptive Social Norms and Motivation to Vote: Everybody's Voting and So Should You." *The Journal of Politics* 71,1: 178-191.

Giné, Xavier, Dean Karlan, and Jonathan Zinman. 2010. "Put Your Money Where Your Butt Is: A Commitment Contract for Smoking Cessation." *American Economic Journal: Applied Economics* 2, 4: 213-235.

Glosser, Asaph, Dan Cullinan, and Emmi Obara. 2016. *Simplify, Notify, Modify: Using Behavioral Insights to Increase Incarcerated Parents' Requests for Child Support Modifications*. New York: MDRC.

Goldstein, Noah J., Robert B. Cialdini, and Vladas Griskevicius. 2008. "A Room with a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels." *Journal of Consumer Research* 35, 3: 472-482.

Green, Donald P. 2004. "Mobilizing African-American Voters Using Direct Mail and Commercial Phone Banks: A Field Experiment." *Political Research Quarterly* 57, 2: 245-255.

Grynbaum, Michael. 2009. "New York's Cabbies Like Credit Cards? Go Figure." *The New York Times* (November 7): A1.

Hackman, J. R., and G. R. Oldham. 1976. "Motivation Through the Design of Work: Test of a Theory." *Organizational Behavior and Human Performance* 16, 2: 250-279.

Hastings, Justine S., and Jeffrey M. Weinstein. 2008. "Information, School Choice, and Academic Achievement: Evidence from Two Experiments." *The Quarterly Journal of Economics* 123, 4: 1373-1414.

Haynes, Laura C., Donald P. Green, Rory Gallagher, Peter John, and David J. Torgerson. 2013. "Collection of Delinquent Fines: An Adaptive Randomized Trial to Assess the Effectiveness of Alternative Text Messages." *Journal of Policy Analysis and Management* 32, 4: 718-730.

Haynes, Laura, Owain Service, Ben Goldacre, and David Torgerson. 2012. *Test, Learn, Adapt: Developing Public Policy with Randomised Controlled Trials*. London: Cabinet Office Behavioural Insights Team.

Heath, C., R. P. Larrick, and G. Wu. 1999. "Goals as Reference Points." *Cognitive Psychology* 38: 79-109.

Heath, Chip, and Sim B. Sitkin. 2001. "Big-B versus Big-O: What is *Organizational* about Organizational Behavior?" *Journal of Organizational Behavior* 22: 43-58.

Heller, Sara B., Anuj K. Shah, Jonathan Guryan, Jens Ludwig, Sendhil Mullainathan, and Harold A. Pollack. Forthcoming. "Thinking, Fast and Slow? Some Field Experiments to Reduce Crime and Dropout in Chicago." *The Quarterly Journal of Economics*.

Helmer, Matt. 2015. *How Poverty and Cognitive Biases Can Impact Decisions and Actions: Using Research from Behavioral Economics and Psychology to Improve Workforce Development Services*. Seattle, WA: Seattle Jobs Initiative.

Hogarth, Robin M. 1981. "Beyond Discrete Biases: Functional and Dysfunctional Aspects of Judgmental Heuristics." *Psychological Bulletin* 90, 2: 197-217.

Hossain, Tanjim, and John A. List. 2012. "The Behavioralist Visits the Factory: Increasing Productivity Using Simple Framing Manipulations." *Management Science* 58, 12: 2151-2167.

Hu, Wei-Yin, and Jason S. Scott. 2007. "Behavioral Obstacles in the Annuity Market." *Financial Analysts Journal* 63, 6: 71-82.

IDEO.org. 2015. *The Field Guide to Human-Centered Design*. Online document. Website: www.designkit.org.

Internal Revenue Service. 2015. "Tax Year Fast Facts: Earned Income Tax Credit." Online document. Website: https://www.eitc.irs.gov/EITCCentral/FASTFACTgrnlogo2.pdf.

Internal Revenue Service. 2016. "Statistics for Tax Returns with EITC." Online document. Website: https://www.eitc.irs.gov/EITC-Central/eitcstats.

Isaksen, Scott G., and Donald J. Treffinger. 1994. *Creative Approaches to Problem Solving*. Dubuque, IA: Kendall-Hunt.

Kahneman, Daniel. 2003. "Maps of Bounded Rationality: Psychology for Behavioral Economics." *American Economic* Review 93, 5: 1449-1475.

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

Kahneman, Daniel, Jack L. Knetsch, and Richard H. Thaler. 2000. "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias." In Daniel Kahneman and Amos Tversky (eds.), *Choices, Values, and Frames*. New York: Cambridge University Press.

Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica* 47, 2: 263-291.

Kahneman, Daniel, and Amos Tversky. 2000. "Choices, Values, and Frames." In Daniel Kahneman and Amos Tversky (eds.), *Choices, Values, and Frames*. New York: Cambridge University Press.

Kaiser, Cheryl R., and Victor D. Quintanilla. 2014. "Access to Counsel: Psychological Science Can Improve the Promise of Civil Rights Enforcement." *Policy Insights from the Behavioral and Brain Sciences* 1, 1: 95-102.

Karlan, Dean, and Margaret A. McConnell. 2014. "Hey Look at Me: The Effect of Giving Circles on Giving." *Journal of Economic Behavior & Organization* 106: 402-412.

Karlan, Dean, Margaret McConnell, Sendhil Mullainathan, and Jonathan Zinman. 2016. "Getting to the Top of Mind: How Reminders Increase Saving." *Management Science*.

Kleven, Henrik Jacobsen, and Wojciech Kopczuk. 2011. "Transfer Program Complexity and the Take-Up of Social Benefits." *American Economic Journal: Economic Policy* 3, 1: 54-90.

Kraft, Matthew A., and Todd Rogers. 2015. "The Underutilized Potential of Teacher-to-Parent Communication: Evidence from a Field Experiment." *Economics of Education Review* 47: 49-63.

Kühberger, A. 1998. "The Influence of Framing on Risky Decisions: A Meta-analysis." *Organizational Behavior and Human Decision Processes* 75, 1: 23-55.

Lantz, Paula M., Debra Stencil, MaryAnn T. Lippert, Sarah Beversdorf, Linda Jaros, and Patrick L. Remington. 1995. "Breast and Cervical Cancer Screening in a Low-Income Managed Care Sample: The Efficacy of Physician Letters and Phone Calls." *American Journal of Public Health* 85, 6: 834-836.

Larrick, Richard P., Jack B. Soll, and Ralph L. Keeney. 2015. "Designing Better Energy Metrics for Consumers." *Behavioral Science & Policy* 1, 1: 63-75.

Lei, H., I. Nahum-Shani, K. Lynch, D. Oslin, and S.A. Murphy. 2012. "A 'SMART' Design for Building Individualized Treatment Sequences." *Annual Review of Clinical Psychology* 8: 21-48.

Lessig, Lawrence. 1999. *Code: And Other Laws of Cyberspace*. New York: Basic Books.

Lourenço, Joana Sousa, Emanuele Ciriolo, Sara Rafael Almeida, and Xavier Troussard. 2016. *Behavioural Insights Applied to Policy: European Report 2016*. Science for Policy Report (EUR 277726 EN), Joint Research Centre, European Commission. Brussels, Luxembourg: Publications Office of the European Union.

Ly, Kim, Nina Mažar, Min Zhao, and Dilip Soman. 2013. *A Practitioner's Guide to Nudging*. Toronto, Ontario: Rotman School of Management, University of Toronto.

Ly, Kim, and Dilip Soman. 2013. *Nudging Around the World*. Toronto, Ontario: Behavioral Economics in Action, Rotman School of Management, University of Toronto.

Lynch, Karen E. 2014. *The Child Care and Development Block Grant: Background and Funding*. Washington, DC: Congressional Research Service.

Mayer, Alexander K., Dan Cullinan, Elizabeth Calmeyer, and Kelsey Patterson. 2015. *Engaging Providers and Clients: Using Behavioral Economics to Increase On-Time Child Care Subsidy Renewals*. New York: MDRC.

Meckstroth, Alicia, Alexandra Resch, Jonathan McCay, Michelle Derr, Jillian Berk, and Lauren Akers. 2015. *Advancing Evidence-Based Decision Making: A Toolkit on Recognizing and Conducting Opportunistic Experiments in the Family Self-Sufficiency and Stability Policy Area*. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Milkman, Katherine L., John Beshears, James Choi, David Laibson, and Brigitte Madrian. 2011. "Using Implementation Intentions Prompts to Enhance Influenza Vaccination Rates." *Proceedings of the National Academy of Sciences* 108, 26: 10415-10420.

Miller, Cynthia, Caroline Schultz, and Alexandra Bernardi. 2015. *Testing an Expanded Earned Income Tax Credit for Single Adults: Year 1 of Paycheck Plus*. New York: MDRC.

Mullainathan, Sendhil, and Eldar Shafir. 2013. *Scarcity: Why Having Too Little Means So Much*. New York: Times Books.

Mullainathan, Sendhil, and Richard H. Thaler. 2000. "Behavioral Economics." NBER Working Paper No. 7948. Cambridge, MA: National Bureau of Economic Research.

National Association for the Education of Homeless Children and Youth. 2014. *Financial Aid for Unaccompanied Homeless Youth: A Survey Report*. Minneapolis, MN: National Association for the Education of Homeless Children and Youth.

National Science and Technology Council. 2015. *Social and Behavioral Sciences Team 2015 Annual Report*. Washington, DC: National Science and Technology Council, Office of Science and Technology Policy, Executive Office of the President.

Nichols, Albert L., and Richard J. Zechauser. 1982. "Targeting Transfers through Restrictions on Recipients." *The American Economic Review* 72, 2: 372-377.

Office of Child Care. 2015. *OCC Fact Sheet*. Washington, DC: Office of Child Care, Administration for Children and Families, U.S. Department of Health and Human Services.

Office of Child Support Enforcement. 2012a. *Realistic Child Support Orders for Incarcerated Parents*. Project to Avoid Increasing Delinquencies (PAID) — Child Support Fact Sheet No. 4. Washington, DC: Administration for Children and Families, U.S. Department of Health and Human Services.

Office of Child Support Enforcement. 2012b. *"Voluntary Unemployment," Imputed Income, and Modification Laws and Policies for Incarcerated Noncustodial Parents Chart*. Project to Avoid Increasing Delinquencies (PAID) — Child Support Fact Sheet No. 4 Companion Piece. Washington, DC: Administration for Children and Families, U.S. Department of Health and Human Services.

Office of Child Support Enforcement. 2013. *Child Support and Parenting Time: Improving Coordination to Benefit Children*. Washington, DC: Administration for Children and Families, U.S. Department of Health and Human Services.

Office of Child Support Enforcement. 2014. *Changing a Child Support Order*. Washington, DC: Administration for Children and Families, U.S. Department of Health and Human Services.

Office of Child Support Enforcement. 2016a. *Flexibility, Efficiency, and Modernization in Child Support Enforcement Programs*. Washington, DC: Administration for Children and Families, U.S. Department of Health and Human Services. Website: https://www.gpo.gov/fdsys/pkg/FR-2016-12-20/pdf/2016-29598.pdf

Office of Child Support Enforcement. 2016b. *FY 2015 Preliminary Data Report*. DCL-16-07. Washington, DC: Office of Child Support Enforcement, Administration for Children and Families, U.S. Department of Health and Human Services. Website: www.acf.hhs.gov/css/resource/fy-2015-preliminary-data-report.

Osborn, Alex. 1963. *Applied Imagination; Principles and Procedures of Creative Problem-Solving*. New York: Scribner.

Parnes, Sidney Jay. 1967. *Creative Behavior Workbook*: New York: Scribner.

Puccio, Gerard J., Mary C. Murdock, and Marie Mance. 2005. "Current Developments in Creative Problem Solving for Organizations: A Focus on Thinking Skills and Styles." *The Korean Journal of Thinking and Problem Solving* 15, 2: 43-76.

Rabin, Matthew. 1998. "Psychology and Economics." *Journal of Economic Literature* 36, 1: 11-46.

Rattan, Aneeta, Krishna Savani, Dolly Chugh, and Carol S. Dweck. 2015. "Leveraging Mindsets to Promote Academic Achievement." *Perspectives on Psychological Science* 10, 6: 721-726.

Richburg-Hayes, Lashawn, Caitlin Anzelone, Nadine Dechausay, Saugato Datta, Alexandra Fiorillo, Louis Potok, Matthew Darling, and John Balz. 2014a. *Behavioral Economics and Social Policy: Designing Innovative Solutions for Programs Supported by the Administration for Children and Families*. OPRE Report 2014-16a. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Richburg-Hayes, Lashawn, Caitlin Anzelone, Nadine Dechausay, Saugato Datta, Alexandra Fiorillo, Louis Potok, Matthew Darling, and John Balz. 2014b. *Behavioral Economics and Social Policy: Designing Innovative Solutions for Programs Supported by the Administration for Children and Families. Technical Supplement: Commonly Applied Behavioral Interventions*. OPRE Report 2014-16b. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Rodgers, Anthony, Tim Corbett, Dale Bramley, Tania Riddell, Mary Wills, Ruey-Bin Lin, and Mark Jones. 2005. "Do u smoke after txt? Results of a Randomised Trial of Smoking Cessation Using Mobile Phone Text Messaging." *Tobacco Control* 14, 4: 255-261.

Rodrigue, Edward, and Richard V. Reeves. 2015. "Cutting Poverty by Increasing Program Participation." *Social Mobility Memos* (June 11). Blog post. Washington, DC: The Brookings Institution. Website: https://www.brookings.edu/blog/social-mobility-memos/2015/06/11/cutting-poverty-by-increasing-program-participation.

Schultz, P. Wesley. 1999. "Changing Behavior with Normative Feedback Interventions: A Field Experiment on Curbside Recycling." *Basic and Applied Social Psychology* 21, 1: 25-36.

Schwartz, Heather L., Kata Mihaly, and Breann Gala. 2016. "Encouraging Residential Moves to Opportunity Neighborhoods: An Experiment Testing Incentives Offered to Housing Voucher Recipients." *Housing Policy Debate*: 1-31. Online document. Website: www.tandfonline.com/doi/full/10.1080/10511482.2016.1212247.

Schwartz, Marlene B. 2007. "The Influence of a Verbal Prompt on School Lunch Fruit Consumption: A Pilot Study." *International Journal of Behavioral Nutrition and Physical Activity* 4, 6.

Service, Owain, Michael Hallsworth, David Halpern, Felicity Algate, Rory Gallagher, Sam Nguyen, Simon Rudd, Michael Sanders, with Marcos Pelenur, Alex Gyani, Hugo Harper, Joanne Reinhard, and Elspeth Kirkman. 2014. *EAST: Four Simple Ways to Apply Behavioural Insights*. London: The Behavioural Insights Team.

Shadish, William R., Thomas D. Cook, and Donald T. Campbell. 2002. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton Mifflin Company.

Shih, Margaret, Todd L. Pittinsky, and Nalini Ambady. 1999. "Stereotype Susceptibility: Identity Salience and Shifts in Quantitative Performance." *Psychological Science* 10, 1: 80-83.

Shlay, Anne B., Marsha Weinraub, Michelle Harmon, and Henry Tran. 2004. "Barriers to Subsidies: Why Low-Income Families Do Not Use Child Care Subsidies." *Social Science Research* 33, 1: 134-157.

Singh, Jitendra V. 1986. "Performance, Slack, and Risk Taking in Organizational Decision Making." *The Academy of Management Journal* 29, 3: 562-585.

Sitkin, Sim B. 1992. "Learning Through Failure: The Strategy of Small Losses." *Research in Organizational Behavior* 14: 231-266.

Sitkin, Sim, K. Sutcliffe, and R. Schroeder. 1994. "Distinguishing Control from Learning in Total Quality Management: A Contingency Perspective." *Academy of Management Review* 18, 3: 537-564.

Solomon-Fears, Carmen, Alison M. Smith, and Carla Berry. 2012. *Child Support Enforcement: Incarceration As the Last Resort Penalty For Nonpayment of Support*. Washington, DC: Congressional Research Service.

Stansfield, Timothy C., and Clinton O. Longenecker. 2006. "The Effects of Goal Setting and Feedback on Manufacturing Productivity: A Field Experiment." *International Journal of Productivity and Performance Management* 55, 3/4: 346-358.

Staw, Barry M. 1976. "Knee-Deep in the Big Muddy: A Study of Escalating Commitment to a Course of Action." *Organizational Behavior and Human Performance* 16, 1: 27-44.

Staw, Barry M., Lance E. Sandelands, and Jane E. Dutton. 1981. "Threat-Rigidity Effects in Organizational Behavior: A Multi-Level Analysis." *Administrative Science Quarterly* 26, 4: 501-524.

Sunstein, Cass R. 2013a. "Deciding By Default." *University of Pennsylvania Law Review* 162, 1: 1-57.

Sunstein, Cass R. 2013b. "Behavioral Economics, Consumption, and Environmental Protection." Regulatory Policy Program Working Paper RPP-2013-19. Cambridge, MA: Mossavar-Rahmani Center for Business and Government, Harvard Kennedy School, Harvard University.

Sutcliffe, K., Sim Sitkin, and L. Browning. 2000. "Tailoring Process Management to Situational Requirements: Beyond the Control and Exploration Dichotomy." Pages 315-330 in R. Cole and W. R. Scott (eds.), *The Quality Movement in America: Lessons for Theory and Research*. Thousand Oaks, CA: Sage Publications.

Thaler, Richard. 1985. "Mental Accounting and Consumer Choice." *Marketing Science* 4, 3: 199-214.

Thaler, Richard H., and Cass R. Sunstein. 2008. *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.

Tout, Kathryn, Rebecca Starr, Margaret Soli, Shannon Moodie, Gretchen Kirby, and Kimberly Boller. 2010. *The Child Care Quality Rating System (QRS) Assessment: Compendium of Quality Rating Systems and Evaluations*. Washington, DC: Child Trends.

Tversky, Amos, and Daniel Kahneman. 1991. "Loss Aversion in Riskless Choice: A Reference-Dependent Model." *The Quarterly Journal of Economics* 106, 4: 1039-1061.

Tversky, Amos, and Itamar Simonson. 2000. "Context-Dependent Preferences." In Daniel Kahneman and Amos Tversky (eds.), Choices, Values, and Frames. New York: Cambridge University Press.

U.S. Department of Agriculture. 2010. "USDA Funds Research on Improving Child Nutrition Programs Through Behavioral Economics." News Release No. 0514.10.

U.S. Department of Health and Human Services. 2015. "Child Care and Development Fund (CCDF) Program. A Proposed Rule by the Health and Human Services Department on 12/24/2015." *Federal Register* 80 FR 80465: 80465-80582. Docket Number ACF-2015-0011. Document Number 2015-31883. Washington, DC: Office of Child Care, Administration for Children and Families, U.S. Department of Health and Human Services. Website: https://www.federalregister.gov/documents/2015/12/24/2015-31883/child-care-and-develop-fund-ccdf.

U.S. Government Accountability Office. 2009. *Retirement Savings: Automatic Enrollment Shows Promise for Some Workers, but Proposals to Broaden Retirement Savings for Other Workers Could Face Challenges*. Washington, DC: U.S. Government Accountability Office.

Wansink, Brian, and Koert van Ittersum. 2003. "Bottoms Up! The Influence of Elongation on Pouring and Consumption Volume." *Journal of Consumer Research* 30, 3: 455-463.

Weick, Karl E. 1984. "Small Wins: Redefining the Scale of Social Problems." *American Psychologist* 39, 1: 40-49.

Weiss, Michael J., Howard S. Bloom, and Thomas Brock. 2013. *A Conceptual Framework for Studying the Sources of Variation in Program Effects*. New York: MDRC.

Whitehead, Mark, Rhys Jones, Rachel Howell, Rachel Lilley, and Jessica Pykett. 2014. *Nudging All Over the World: Assessing the Global Impact of the Behavioural Sciences on Public Policy*. Swindon, UK: Economic and Social Research Council.

Woolley, Anita Williams, Christopher F. Chabris, Alex Pentland, Nada Hasmi, and Thomas W. Malone. 2010. "Evidence for a Collective Intelligence Factor in the Performance of Human Groups." *Science* 330, 6004: 686-688.

World Bank. 2015. *World Development Report 2015: Mind, Society, and Behavior*. Washington, DC: The World Bank.

Yeung, Catherine W. M., and Dilip Soman. 2007. "The Duration Heuristic." *Journal of Consumer Research* 34, 3.

Zucker, Lynne G. 1977. "The Role of Institutionalization in Cultural Persistence." *American Sociological Review* 42, 5: 726-743.

Nudging Change In Human Services

Earlier Publications from the BIAS Project

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

2016. Asaph Glosser, Dan Cullinan, and Emmi Obara. OPRE Report 2016-43. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

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

2016. Dechausay, Nadine, and Caitlin Anzelone. OPRE Report 2016-03. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Framing the Message: Using Behavioral Economics to Engage TANF Recipients

2016. Farrell, Mary, Jared Smith, Leigh Reardon, and Emmi Obara. OPRE Report 2016-02. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Nudges for Child Support: Applying Behavioral Insights to Increase Collections

2016. Baird, Peter, Dan Cullinan, Patrick Landers, Leigh Reardon. OPRE Report 2016-01. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

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

2015. Mayer, Alex, Dan Cullinan, Elizabeth Calmeyer, Kelsey Patterson. OPRE Report 2015-73. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

The Power of Prompts: Using Behavioral Insights to Encourage People to Participate

2015. Dechausay, Nadine, Caitlin Anzelone, Leigh Reardon. OPRE Report 2015-75. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Reminders to Pay: Using Behavioral Economics to Increase Child Support Payments

2015. Baird, Peter, Leigh Reardon, Dan Cullinan, Drew McDermott, and Patrick Landers. OPRE Report 2015-20. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

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

2014. Farrell, Mary, Caitlin Anzelone, Dan Cullinan, and Jessica Wille. OPRE Report 2014-37. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

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

2014. Richburg-Hayes, Lashawn, Caitlin Anzelone, Nadine Dechausay, Saugato Datta, Alexandra Fiorillo, Louis Potok, Matthew Darling, and John Balz. OPRE Report 2014-16a. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.