

## Think Before You Act: A New Approach to Preventing Youth Violence and Dropout

Jens Ludwig and Anuj Shah



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We believe that today's increasingly competitive global economy demands public policy ideas commensurate with the challenges of the 21st Century. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments.

Our strategy calls for combining public investment, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

The Project is named after Alexander Hamilton, the nation's first Treasury Secretary, who laid the foundation for the modern American economy. Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that “prudent aids and encouragements on the part of government” are necessary to enhance and guide market forces. The guiding principles of the Project remain consistent with these views.





# Think Before You Act: A New Approach to Preventing Youth Violence and Dropout

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NOTE: This discussion paper is a proposal from the authors. As emphasized in The Hamilton Project's original strategy paper, the Project was designed in part to provide a forum for leading thinkers across the nation to put forward innovative and potentially important economic policy ideas that share the Project's broad goals of promoting economic growth, broad-based participation in growth, and economic security. The authors are invited to express their own ideas in discussion papers, whether or not the Project's staff or advisory council agrees with the specific proposals. This discussion paper is offered in that spirit.

**BROOKINGS**

# Abstract

Improving the long-term life outcomes of disadvantaged youths remains a top policy priority in the United States. Unfortunately, long-term progress in improving outcomes like high school graduation rates and reduction of violent crime has been limited, partly because finding ways to successfully improve outcomes for disadvantaged youths (particularly males) has proven to be challenging. We believe one reason so many previous strategies have failed is because they at least implicitly assume that young people are forward-looking and consider the long-term consequences of their actions before they act. But a growing body of research in psychology and behavioral economics suggests that a great deal of everyone's behavior happens intuitively and automatically, with little deliberate thought. Although it is often helpful for us to rely on automatic responses to guide our daily behavior, doing so can also get us into trouble, with consequences that are particularly severe for young people growing up in distressed urban areas where gangs, drugs, and guns are prevalent. We thus propose that the federal government aim to provide each teenager living in poverty in the United States with one year of behaviorally informed programming, intended to help youths recognize high-stakes situations when their automatic responses may be maladaptive. Such a program could teach young people to slow down and think about what they are doing, or could help them “rewire” their automatic responses. Our team has carried out several randomized controlled trials in Chicago that demonstrate that this approach, which is a version of what psychologists call cognitive behavioral therapy, can reduce arrests for violent crime by 30 to 50 percent, improve schooling outcomes, and generate benefits to society that may be up to thirty times the program costs. We suggest that the federal government scale up the program over five years, and that it combine this scale-up with rigorous evaluation to learn more about how best to implement (and, if needed, modify) the program at scale in different contexts across the country. The demonstration phase of the project would cost \$50 million to \$100 million per year over five years, while the at-scale cost would be \$2 billion annually. The demonstration and eventual scale-up would be led by the Coordinating Council on Juvenile Justice and Delinquency Prevention. If successful, this effort would improve the long-term well-being of our nation's most disadvantaged young people, reduce crime, improve schooling attainment, reduce income inequality, and enhance the nation's overall economic competitiveness.

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# Chapter 1: Introduction

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Improving the long-term life outcomes of disadvantaged youths remains a top policy priority in the United States. The average four-year high school graduation rate in the fifty largest urban school districts in America is just 53 percent (Swanson 2009). Dropout puts young people at greatly elevated risk for becoming involved in crime and violence, imprisonment, adverse health, and poverty (Card 1994; Cutler and Lleras-Muney 2010; Lochner and Moretti 2004). Long-term progress in addressing these problems has been limited, in part because finding ways to improve outcomes for disadvantaged youths (particularly males) has proven to be challenging.<sup>1</sup>

We believe part of the explanation for why so many previous interventions to help disadvantaged youths fail is because they assume, at least implicitly, that young people are forward-looking and that they consider the long-term consequences of their actions before they act. Educational or job-training interventions assume that youths will engage in human capital-building activities today that are often challenging, seemingly irrelevant, tedious, or even outright boring, in exchange for higher earnings several years down the road when they finally enter the job market. Criminologists often assume that the prospect of higher future earnings will cause educational or job-training programs to reduce the risk that youths engage in crime; they reason that youths will realize that their improved long-term earnings prospects mean they have more to lose from engaging in crime. The dominant policy approach to reducing crime in America over the past forty years has been to put more and more people in prison for ever-longer prison terms, partly in the belief that the prospect of spending a few additional years behind bars (say, eight instead of five) will cause someone to think twice before he engages in a criminal act.

But these policy strategies fundamentally misunderstand the psychology and behavioral economics of so much of adolescents' behavior—or anyone's behavior, for that matter. A growing body of research suggests that behavior is driven by two very different types of decision-making, as brilliantly summarized by Daniel Kahneman in *Thinking, Fast and Slow* (2011): A lot of the behavior that each of us engages in every day is made intuitively, even automatically, with little deliberate thought—using what psychologists call “system 1.” These automatic thoughts are susceptible to a number of learned rules of thumb (or heuristics) that can bias our judgments and decisions. Depending on the circumstances, decision-making and behavior can sometimes be more deliberate and

A lot of the behavior that each of us engages in every day is made intuitively, even automatically, with little deliberate thought...

reflective—using what psychologists call “system 2.” Yet, because deliberation is mentally costly, we usually rely on automatic behavior.

Usually this reliance on automatic responses is adaptive. But automatic behavior can also sometimes lead us into trouble—with consequences that can be particularly severe for some of the most socially disadvantaged and vulnerable young people in America growing up in distressed, dangerous urban communities. Too often, low-income youths (just like the rest of us) rely on automatic heuristics or behaviors that are useful in some circumstances but not in others—and they

(and we) sometimes don't quite realize which type of situation we are in. Policies to change the long-term benefits or costs associated with outcomes like schooling or crime may have little effect in cases where dropout or delinquency is driven by automatic behavior.

We believe that there can be very high returns to investing in social policy interventions to reduce those automatic behaviors that can at least in some circumstances lead to bad outcomes for disadvantaged youths living in distressed, dangerous urban neighborhoods. In particular, what psychologists call cognitive behavioral therapy (CBT) tries to help young people recognize when automatic judgments and decision-making may be maladaptive, and also to help youths identify and essentially debias biased heuristics. These sorts of CBT programs tend to be fairly short in duration (often just twenty to thirty hours total of programming) and thus have relatively modest costs of a few thousand dollars per participant.

The idea that this type of intervention can work may seem like wishful thinking, given how few previous social programs (including even very intensive, expensive programs) wind up successfully changing outcomes for disadvantaged youths—particularly males. But research from several rigorous randomized controlled trials (RCTs)—the sort that provide gold standard evidence in medicine—that we have carried out with our collaborators suggests that even low-cost versions of this type of programming can generate very large behavior changes. These studies find increases in expected high school graduation rates of up to 20 percent (which is an important effect, given how flat the trend in U.S. graduation rates has been over the past forty years), and reductions in violent-crime arrests in three separate RCTs on the order of 30 to 50 percent.

The main barrier to scaling up this type of intervention nationwide is neither cost nor cost-effectiveness—it is the currently limited understanding of the key ingredients of

successful programs. We believe there would be great value in starting to scale up this type of intervention through a five-year demonstration project, using the demonstration and scale-up process itself to learn more about what needs to be in place for versions of this type of intervention to work. Some of the Chicago programs our team has studied, including *Becoming a Man (BAM)* developed by Chicago-area nonprofit Youth Guidance, provide some initial ideas about what components of a successful version of this intervention might look like. In “The Proposal” section of this paper, we provide a roadmap for this demonstration and scale-up, which is intended to help us learn how this strategy works in cities other than Chicago, whether or how it needs to be modified in other cities, and how to “franchise” the basic intervention model so local nonprofit organizations can customize and deliver a version of it in their local communities. The costs of the demonstration and scale-up are \$50 million per year for the first two years, and \$100 million per year for the next three years. Rigorous evaluation would be a critical component of this initial demonstration phase so that by the end of five years we would know enough to ensure success at large scale and help transform the lives of some of America's most disadvantaged residents.

We estimate that the cost of providing every low-income teenager in the country with a year of this type of behaviorally informed programming would be on the order of about \$2 billion annually. The benefit–cost ratios we estimate for this type of intervention can be as high as \$30 in benefits to society for each \$1 invested. Even the most successful government programs rarely have benefit–cost ratios in this range, particularly programs targeted toward disadvantaged youths. Indeed, more than a few social or educational programs for this population seem to have little or no evidence for effectiveness at all. We thus propose repurposing \$2 billion of existing funds for these sorts of behaviorally informed programs.



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## Chapter 2: The Challenge

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It is amply and depressingly clear that a constellation of adverse life outcomes like truancy, delinquency, violence involvement, and high school dropout cluster together with greatly elevated prevalence rates among low-income youths living in high-poverty neighborhoods. It has been less clear what to do about them.

### A. UNDERSTANDING THE PROBLEM

The fact that adverse schooling outcomes and other risky behaviors are more prevalent in disadvantaged areas, and tend to cluster together, often leads to the conclusion that these behaviors are the result of conscious, deliberate decisions by youths about what sorts of lives they wish to lead. Someone who drops out of school, sells drugs, and periodically engages in violence has made enough individually and socially harmful choices to suggest to many observers that these decisions are intentional, not accidental. But a closer look suggests many of these decisions do not seem to be very thought out, despite their prevalence.

The earliest risk behavior observed for most children is disengagement with school—that is, truancy. For example, the Chicago Public Schools (CPS) serve more than 400,000 students, of whom 87 percent are from low-income families and more than 90 percent are ethnic or racial minorities (CPS 2014). Around one in eight students in kindergarten through grade 8 misses more than four weeks of school each school year. The problem is particularly acute for black children, whose truancy rates in kindergarten through grade 8 are at least two and a half times those of either whites or Hispanics.<sup>2</sup> By the time these children reach high school, prevalence of truancy is much higher still.

The culmination of chronic truancy is dropout.<sup>3</sup> Among major urban school districts in the United States, the average four-year cohort graduation rate is just 53 percent (Swanson 2009). Particularly puzzling is that the high school graduation rate in the United States has not changed much in forty years, as seen in figure 1, despite the fact that the earnings premium to having either a high school or college diploma has increased dramatically over this period (Goldin and Katz 2008; Heckman and LaFontaine 2010; Murnane 2013). In Chicago as of this writing, just 8 percent of CPS students will go on to graduate from a four-year college (Allensworth 2006).

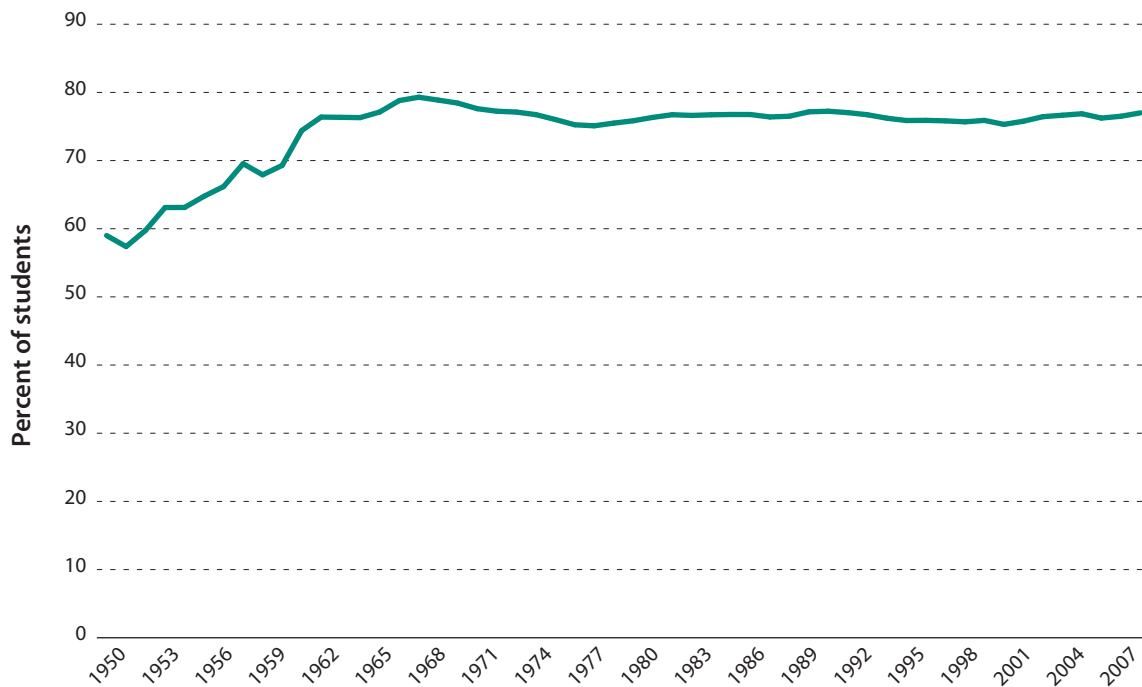
Why do so many young people miss so much school and eventually drop out? Is it because they sat down, did the calculations, and decided that the labor market rewards for a high school diploma or four-year college degree are inadequate? The most common reasons students reported for their truancy include social anxiety stemming from peer interactions, safety concerns, poor academic achievement and comprehension, and seeking parental attention (Dube and Orpinas 2009; McShane, Walter, and Rey 2001). One of the most common reasons cited for dropping out of high school is “dislike of school” (Jordan, Lara, and McPartland 1996; Rumberger 1987). Other commonly reported reasons include “I couldn’t get along with teachers,” “I couldn’t keep up with my school work,” “I was failing at school,” and “I felt I didn’t belong at school” (Jordan, Lara, and McPartland 1996). These are short-term (but very salient) factors that drive a key life decision that has major long-term consequences.

Or consider the closely related problems of delinquency and violence: nearly 70 percent of black male dropouts will spend time in prison by their mid-thirties (Western and Pettit 2010). Among males ages fifteen to twenty-four, the 2010 homicide rate for blacks was eighteen times that of whites (75 vs. 4 per 100,000 residents). Because homicide disproportionately affects the young, more years of potential life are lost to homicide among black males than to the nation’s leading overall killer—heart disease (Centers for Disease Control and Prevention [CDC] 2014).<sup>4</sup> Popular media representations of violence typically emphasize premeditated acts committed to further some instrumental end of an organized criminal group—think of Chris Partlow and Snoop Pearson in *The Wire* going out to commit a hit on behalf of Marlowe Stanfield in his drug war against Avon Barksdale, even bringing along construction equipment in order to dispose of the bodies among Baltimore’s many abandoned houses. In reality, even serious violence often is not premeditated. In Chicago nearly 70 percent of all homicides stem from an altercation, whereas only 10 percent stem from drug-related gang conflicts where deliberate premeditation might be more likely (Chicago Police Department 2011).<sup>5</sup>

Risky, often not-very-thought-through behavior by disadvantaged youths also has important implications for the next generation, not just for these youths themselves.

FIGURE 1.

## High School Graduation Rates in the United States, 1950–2008



Sources: Goldin and Katz 2008; Heckman and LaFontaine 2010; National Center for Education Statistics (NCES) 2007, 2012; Bureau of Labor Statistics (BLS) n.d.; authors' calculations.

Note: Estimates for 1950–1969 come from Goldin and Katz (2008). The estimates for 1970–2008 are an average of estimates from Goldin and Katz (2008), Heckman and LaFontaine (2010), NCES (2007, 2012), and BLS n.d. Graduation rate refers to the percentage of students who receive a regular diploma within four years of entering ninth grade.



Living in a disadvantaged community increases the frequency that youths will engage in sexual intercourse, the number of partners they will have sex with, and their likelihood of engaging in unprotected sex (Baumer and South 2001). Even though birth rates among teenagers ages fifteen to nineteen overall are near historic lows, a wide racial divide persists. The birth rate among black and Hispanic youths in that age range is more than twice the rate of their white counterparts (Martin et al. 2012). Fully 78 percent of teen pregnancies are reportedly unintended (Henshaw 1998).

Of course many adverse life outcomes do often result from the accumulation of a series of decisions that people make every year, or month, or even every day. The frequency of these decisions does not mean that there is no role for the sort of intervention that we describe here, as we discuss further below. But the fact that even the most serious social problems can often stem from just a single bad decision made in the moment helps highlight the power of the intervention strategy we propose.

### B. LIMITS OF PREVIOUS APPROACHES

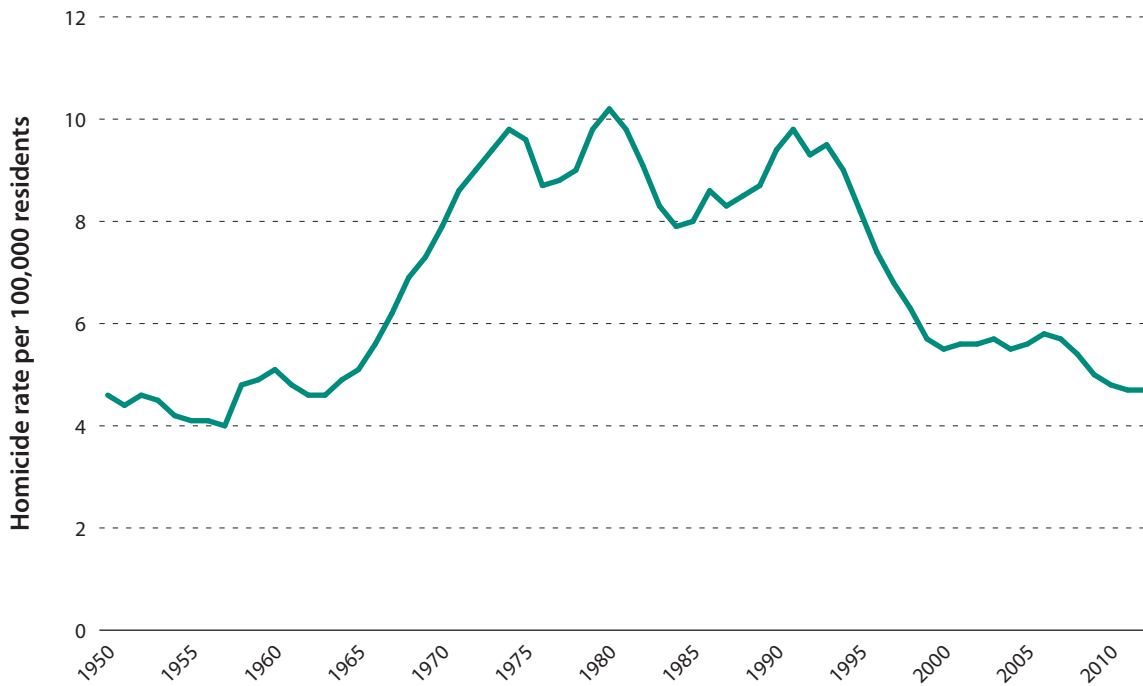
The dominant liberal approach to reducing crime and dropout has been social programs, often in the form of education, job training, or subsidized-work programs to enhance opportunities people have to improve their own long-term

life prospects. The dominant conservative approach has been to lean more and more heavily on punishment—specifically, to put more people in prison for ever-longer prison terms. Since the 1970s the incarceration rate in the United States has increased by 450 percent. We now have 2.2 million people behind bars, with the highest incarceration rate in the world (Glaze and Parks 2012). Both approaches largely assume that youths are forward-looking and that they consider the consequences of their actions. (Incarceration proponents recognize that prison can mechanically reduce crime by also incapacitating dangerous people and keeping them away from everyone else, but certainly the hope is for deterrence also.) The limitations of these approaches, perhaps because their underlying assumption is so often violated, can be seen by the limited progress the United States has made in the past forty or fifty years in reducing either dropout or homicide rates (see figures 1 and 2).<sup>6</sup>

A growing body of research in psychology and behavioral economics about what drives human behavior provides a candidate explanation for why standard approaches have not been more effective: often when people act they are not thinking about the future, or even thinking at all—they are behaving automatically. This automaticity is not unique to at-risk youths—it is a universal feature of how we address

FIGURE 2.

## Homicide Rate in the United States, 1950–2012



Sources: Department of Justice (DOJ) 2010; Fox and Zawitz 2007.

Note: Data for 1950–1959 come from Fox and Zawitz (2007). Data for 1960–2012 come from DOJ (2010). The homicide rate includes murder and nonnegligent manslaughter.



problems and make decisions. But the consequences of this behavior may be particularly severe for young people growing up in disadvantaged urban areas.

To appreciate just how universal automatic behavior is, imagine that we played a game where we quickly flashed words in front of you and asked you to name the color of the ink in which the words were printed. And imagine that we flashed the word “green” printed in red ink; or, if you have a hard time imagining it, here it is: **GREEN**. Your first instinct would actually be to say “green,” because you are so used to reading words presented before you that you do it automatically. And indeed this is often an adaptive way to interact with words. But in this context it is a mistake. And this sort of mistake lies at the heart of a growing literature in behavioral science that highlights how much of human behavior is not carried out deliberately.

Instead, our decisions are often driven by fast, intuitive, and automatic thoughts that stem from what Kahneman (2011) calls system 1 processing (see table 1). A hallmark of system 1 processing is that people often apply heuristics that are adaptive to situations they commonly face, but are sometimes poorly suited to certain environments. We say “green” when we should say “red.”

For example, if a teenager grows up in an environment where his well-being depends on not being seen as a pushover, then it is adaptive for him to learn to retaliate when someone insults him.

TABLE 1.  
**Two Cognitive Systems**

System 1 (Intuitive)	System 2 (Reflective)
<b>Process Characteristics</b>	
Automatic	Controlled
Effortless	Effortful
Associative	Deductive
Rapid, parallel	Slow, serial
Process opaque	Self-aware
Skilled action	Rule application
<b>Content on Which Processes Act</b>	
Affective	Neutral
Causal propensities	Statistics
Concrete, specific	Abstract
Prototypes	Sets

Source: Kahneman and Frederick 2002.

In distressed, high-crime areas where sources of formal social control, like police or schools, are overwhelmed, people are on their own. People in this circumstance learn to automatically push back when threatened to avoid additional victimizations in the future (see, e.g., Anderson 1999; Papachristos 2009). But if he is holding a gun when confronted, then (unless he really faces a serious threat to his safety) it may be better to override this heuristic; he needs to say, “red.” If a teenager hears a teacher say, “Sit down and be quiet,” the youth might instinctively or automatically perceive this as a situation where he should retaliate, act up, and preserve his reputation.

What can be done to curb system 1–driven, automatic violence? Research in behavioral science suggests that more-deliberative, system 2 processing can help correct thinking

errors in system 1 processing. But system 2 processing is effortful. When we are tired or distracted, system 1 errors go unchecked. This poses a clear challenge and opportunity for antiviolence programs: finding ways to nudge youths toward a more reflective way of approaching everyday situations. A natural first step for reducing social harm from system 1–driven behavior that is maladaptive in some circumstances would be to first make young people aware of their automatic tendencies so they can pay attention to situations where they need to slow down and think more deliberately. That is, interventions will gain traction if they focus on meta-cognitive development, or helping kids to “think about their thinking,” to notice where (and why) they might be saying “green” when they should say “red.”

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## Chapter 3: The Proposal

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Rather than trying to change youths' behavior by changing the rewards or punishments they will face five, ten, or twenty years into the future, a different and perhaps more-effective strategy is to acknowledge that a great deal of youths' behavior is automatic. We believe it is possible to make a big difference at low cost by working with disadvantaged youths to recognize those situations in which their automatic responses are likely to be maladaptive and lead to trouble, and to help them slow down and act more deliberately. The evidence (and benefit–cost ratios) from trying this approach several times now in the Chicago context look quite good, and builds on a body of work in which the federal government has made major investments over the years. The key challenge for scale-up will be to figure out exactly what active ingredients and dosages need to be in place for this strategy to work in general, and what modifications are needed for different contexts. We offer a five-year plan to determine how to successfully take this to scale at a cost of \$50 to \$100 million per year. For the at-scale program we anticipate \$2 billion would provide one year of this type of intervention to every disadvantaged teenager in America.

### A. THE GENERAL APPROACH

A promising class of meta-cognitive interventions relies on core principles from cognitive behavioral therapy. CBT starts with the observation that events in the world activate thought processes in the mind. These thought processes then drive behaviors. The central premises of CBT closely follow the argument about system 1 and system 2 processing. First, we are rarely aware of the thought processes that drive behavior; instead, we believe that events directly lead us to feel and act a certain way. Second, our automatic thoughts are often biased in predictable ways. For example, people often overgeneralize and assume that a single negative event is symptomatic of a broader problem. In other words, people jump to conclusions, forming negative interpretations even before there is evidence to support them. People personalize negative events, selectively filter the world, and catastrophize negative outcomes (that is, make negative events even more negative than they really are). And they do that without conscious awareness.

CBT addresses these automatic behaviors by making people more aware of their own thoughts and how their thoughts drive behavior. This naturally disrupts automaticity and

creates a more-reflective way of responding to situations. Instead of mindlessly watching oneself act out in response to an insult, CBT introduces a meta-cognitive process in which people step back and monitor their instinctive thoughts, and then consider whether they are accurate or whether they are distorted in some common way. A large body of research funded by federal government agencies including the National Institutes of Health has shown that the CBT approach can address problems like anxiety, depression, and aggression. But, more generally, CBT teaches people that many of their thoughts, feelings, and behaviors are generated automatically. With greater reflection, additional solutions, or solutions that are better tailored to the actual situation, present themselves.

This style of intervention closely follows the path that behavioral science has taken to correct common errors in how people think and decide. For example, Lovallo and Kahneman (2003) suggest that decision errors can be addressed if people step back and take what they call an outside view, where they situate the current problem among similar scenarios that they have seen before, as a guide to coming up with more-deliberate, more-reflective solutions. Idson and colleagues (2004) find that decision-making errors can be curbed if people see analogies between various problems and situations, reminding them of the repertoire of solutions that they already have at their disposal. Importantly, not only might these meta-cognitive interventions be more effective than the standard liberal and conservative approaches that have been tried over the past several decades, but they also might be less expensive and deployed more easily.

### B. WHY THIS MIGHT WORK: CBT INTERVENTIONS

We believe that CBT interventions are promising partly because they fit so closely with what psychology tells us about how people often behave, and partly because of the promising results from the four separate CBT experiments our research team has carried out in Chicago.<sup>7</sup>

Three of our four CBT experiments examine a version of CBT called *Becoming a Man (BAM)*, which was developed and implemented by two Chicago-area nonprofit organizations, Youth Guidance and World Sport Chicago. Our first experiment was carried out in the 2009–10 academic year, in which 2,740 male youths grades seven to ten attending public

## BOX 1.

### The Fist Exercise

In the fist exercise program staff divide students into pairs. One student is told he has thirty seconds to get his partner to open his fist, then the exercise is reversed. Physical force is almost always the preferred method to compel counterparts to open their hands. After the exercise, the group leader asks the youths to explain what they tried and how it worked, pointedly noting that (as was commonly the case) almost no one simply asked his partner to open his fist. When asked why, youths would frequently say, “He wouldn’t have done it” or “He would have thought I was a punk,” to which the group leader would respond by asking, “How do you know?”

The exercise serves two purposes: First, it is an experiential way of teaching students about hostile attribution bias, or the instinctive assumption that the other person has negative intent; second, it helps engage some who would not normally sign up for a prosocial activity by subversively showing them that beyond getting to skip an academic class, the very first activity of the program involves sometimes-rowdy horseplay.

schools in distressed, dangerous Chicago south-side and west-side neighborhoods were randomly assigned to program or control conditions. Youths assigned to programming were offered in-school and after-school programming that exposed them to prosocial adults, occupied them during high-risk hours after school, and implemented aspects of CBT.

The in-school treatment offered the chance to participate in up to twenty-seven one-hour, weekly group sessions during the school day over the academic year. The intervention was delivered to groups of no more than fifteen youths with a realized youth-to-adult ratio of 8:1. It focused on enhancing meta-cognition by using stories, movies, and metaphors to illustrate unhelpful automatic behaviors and biased beliefs at work in the lives of others. The program was manualized and can be delivered by college-educated people without specialized training in psychology or social work, although Youth Guidance did prefer this sort of training when selecting its program providers. Our observations of program sessions also made clear that the ability of providers to keep students engaged is likely to be essential to program success.

Program staff taught youths to use behavioral experiments to empirically test their biased beliefs during program sessions and as homework between sessions. The program places special emphasis on common processing errors of social information and problems around perspective-taking, such as catastrophizing and focusing on overly narrow, short-term goals. Because monitoring automatic thoughts requires effort, CBT helps focus this effort by helping people recognize indicators that some maladaptive automatic thought or biased belief is being triggered. A shift to some aversive emotion is one common cue (Beck 2011). Given the common risks for this population, a key focus was on anger as a cue. The nature of this exercise is best illustrated by example: the first activity for youths in the program, described in box 1, is the

fist exercise. These types of activities teach students about biases that can result from the reliance of people’s automatic systems on heuristics (rules-of-thumb) that can be adaptive most of the time but maladaptive in some circumstances. One example illustrated by the fist exercise is hostile attribution bias—that is, hypervigilance to threat cues and the tendency to overattribute malevolent intent to others (Dodge, Bates, and Pettit 1990). This bias seems to be more prevalent among youths from disadvantaged backgrounds, partly due to the heightened risk of having experienced abuse growing up.

The after-school portion of the program, delivered by World Sport Chicago, is designed to enhance participation rates and reinforce what youths learn during the in-school program by providing opportunities for them to reflect on automatic responses and decision-making. The after-school sessions are one to two hours each and teach nontraditional sports such as archery, boxing, weightlifting, handball, wrestling, and martial arts. These sports—which require a high degree of self-control and focus, and an appropriate channeling of aggression—offer youths another opportunity to reflect on their automatic behavior.

Participation in BAM in the 2009–10 academic year was found to reduce violent-crime arrests by fully 44 percent, with declines of 38 percent in other crimes (driven by fewer weapons offenses, vandalism, and trespassing offenses within this “other crime” category) (Heller et al. 2013). While there were no statistically significant differences in arrests between the program and control groups the year after programming ended, violence is so costly to society (and the program is so inexpensive) that even one year of substantially reduced violence involvement is enough to generate benefit–cost ratios of up to 30-to-1, depending on how we monetize the costs of crime.<sup>8</sup> Moreover, the 2009–10 BAM experiment did find sustained gains in schooling outcomes that persisted after

the program year. While the youths in the study sample are still too young to have completed high school, their measured changes in school engagement levels forecast gains in expected graduation rates on the order of 7 to 22 percent of the control group's expected graduation rate.

In the summer of 2012, the city of Chicago and our collaborator Sara Heller, who is now on the faculty at the University of Pennsylvania, randomly assigned 1,634 male and female youths from Chicago high schools to receive a summer job (364 participants), to receive a summer job plus a version of CBT (either BAM or a version provided by a different local nonprofit) (366 participants), or to be in the control group (904 participants). Youths were offered five hours of work and/or services, five days a week; jobs-only youths worked five hours a day, while youths assigned to jobs and CBT worked three hours a day and participated in two hours of CBT programming each day. Youths were paid the Illinois minimum wage of \$8.25 an hour. They also received one meal a day and bus passes where appropriate. Follow-up analysis of administrative arrest records showed few effects on schooling outcomes, but showed reductions in violent-crime arrests by youths who participated in any sort of programming of 51 percent compared to those in the control group (University of Chicago Crime Lab 2013). It is important to note that unlike the 2009–10 BAM experiment described above, this study of youths who participated in BAM as part of a summer jobs program did show violent-crime impacts that persisted beyond the end of the program period, with outcomes measured for about seven months after the program ended.

In the 2012–13 academic year, our team partnered with CPS to randomly assign 106 ninth- and tenth-grade male youths at one south-side Chicago high school to receive BAM, to receive BAM plus high-dosage academic remediation, or to be in the control condition.<sup>9</sup> Analysis of the CPS student school records for youths in this study showed that program participation reduced the number of course failures by about two thirds, reduced school absences by about one quarter, and reduced out-of-school suspensions by a nearly statistically significant margin of about one half of the control group's rate (Cook et al. 2014). While our team was for various reasons not able to link this study sample to administrative arrest records, the observed impacts on student school outcomes are very predictive of future crime involvement and imply reductions in violent-crime arrest rates of 26 percent over the program year and follow-up year after the program has ended.<sup>10</sup>

It should be noted that several of the treatment arms we examined in these three experiments blend BAM with some other form of programming (after-school activities, summer jobs, or high-dosage academic remediation). Unfortunately, the sample sizes in the experiments we have carried out so far are not large enough to disentangle the effects of the different

components; our team currently has a larger experiment in the field in Chicago that will finally isolate the effect of BAM. However, the fact that so many previous programs for disadvantaged youth seem not to work, combined with the fact that there were consistent beneficial effects found in the three programs in which BAM is the one common ingredient, makes us think that BAM is contributing to these effects.

We also have a fourth experiment that makes us even more inclined to think there is something to the idea of using CBT to help disadvantaged youths (Heller, Guryan, and Ludwig forthcoming). This comes from a randomized experiment we carried out in collaboration with the Cook County, Illinois, Juvenile Temporary Detention Center (JTDC), which is where the highest-risk youths arrestees in the Chicago area are housed while awaiting disposition of their cases. This intervention tests a very different CBT curriculum from BAM and is delivered by detention-center staff rather than by program providers hired specifically to deliver CBT (as in BAM).

Under court order the JTDC has for many years been run by a temporary administrator whose primary responsibilities included dividing up the administration of the 500-bed facility into about ten separate fifty-bed units. He began to implement a series of changes one by one in the different residential units, which included having youths receive CBT programming delivered by trained detention staff, and slowly increasing the educational-attainment requirements for JTDC staff. Instead of letting the youths spend time watching TV, the JTDC used a CBT-based curriculum that had been developed by Dr. Bernie Glos for the DeKalb County, Illinois detention facility. The program also introduced behavior-modification principles, including a token economy in which participants earned good behavior points they could redeem for anything from extra snacks to more exercise time. The administrator was about halfway through changing residential units to adopt this programming when a union lawsuit halted further changes, so for an extended period about half the fifty-bed units within the facility were using CBT programming while half were not.

Between November 2009 and March 2011, 3,025 separate youths entered the JTDC and were randomly assigned to either CBT or status quo centers within the facility. (Because some youths enter the facility more than once during the study period, the total number of youth-spells—5,727—is larger than the number of youths). Youths who received treatment were 20 to 24 percent less likely to come back to the JTDC after receiving CBT compared to those in the control group, measuring outcomes through eighteen months after release. CBT programming also led to a 10 percent reduction in severe disciplinary infractions committed by youths while inside the JTDC during our study period.

Our team is still in the process of linking these youths to arrest records, so we cannot compare the magnitude of these

TABLE 2.

## Cognitive Behavioral Therapy (CBT) Interventions

Program	Population	Program treatment	Results for participants
<b>2009–2010</b>	2,740 males in grades 7–10 attending public schools in south-side and west-side Chicago.	Participants received in-school and after-school programming with prosocial adults who implemented aspects of CBT, through Youth Guidance's Becoming a Man (BAM) program.	Violent-crime arrests fell by 44 percent (with declines of 38 percent in other crimes) that year.  There were sustained gains in schooling outcomes. Graduation rates are expected to be 7–22 percent higher for program participants.
<b>Summer 2012</b>	1,634 male and female youths from Chicago high schools.	Participants either received a summer job or received a summer job plus a version of CBT (either BAM or some equivalent offered by another Chicago-area nonprofit).	Violent-crime arrests fell by 51 percent. Violent-crime impacts persisted beyond the end of the program period.
<b>2012–2013</b>	106 males in grades 9–10 attending a public school in south-side Chicago.	Participants received either BAM, or BAM plus high-dosage academic remediation.	The number of course failures fell by approximately 66 percent during the program year.  The number of school absences fell by approximately 25 percent during the program year.  Impacts on school outcomes imply reductions in expected future violent-crime arrest rates of 26 percent over the program year and after the program has ended.
<b>2009–2011</b>	3,025 youths at the Cook County, Illinois Juvenile Temporary Detention Center (JTDC).	Participants received CBT programming delivered by trained detention staff. A token economy rewarded good behavior with points that were redeemable for snacks, more exercise time, etc.	Likelihood of returning to the JTDC fell by 20–24 percent in eighteen months after release.  The program reduced severe disciplinary infractions committed by youths while inside the JTDC by 10 percent.

effects to those in BAM for a common set of outcomes like violent-crime arrests. But the fact that a very different CBT curriculum from that of BAM, delivered by different types of providers (detention staff vs. professional CBT providers), is still capable of generating statistically significant changes in youth behavior provides additional support for the potential promise of scaling up CBT to help disadvantaged youths. For a summary of the four CBT interventions and their results, see table 2. For conceptual reasons we are inclined to prefer the BAM CBT curriculum over the JTDC CBT curriculum, partly because the BAM curriculum is more experiential (that is, it is more “show” than “tell”).

### C. THE WAY FORWARD: OUR PROPOSAL

Given the apparent success of these previous CBT programs in Chicago, there would seem to be great value in trying to harness the power of this general approach to help disadvantaged youths nationwide. The barrier to scaling this approach up is not likely to be cost: we estimate that the annual cost of scaling this sort of behaviorally informed intervention nationwide would be around \$2 billion total.<sup>11</sup> To provide some context, this spending level is about one quarter the annual federal budget for the Head Start early childhood program (\$8 billion), and miniscule compared to the approximately \$200



billion that the United States spends each year on the criminal justice system (Census Bureau 2012, Table 345), the additional \$220 billion spent on safety-net programs for families with children (Currie 2006), and the \$590 billion or so spent per year on K–12 public schools (Census Bureau 2012, Table 261).<sup>12</sup>

The challenge is that at present we do not know exactly which CBT ingredients are crucial for success, nor do we understand well how the model should or must be adapted to fit local circumstances (including how to make the model work for girls, since tests in Chicago have mostly only included boys). Adaptation to local conditions may be critical because CBT is about helping youths recognize those particular situations in which their automatic responses are maladaptive; in principle, the key situations and maladaptive automatic responses that are adversely affecting disadvantaged youths could look different across areas. The scaling-up process itself provides an important opportunity to address these key open questions.

Specifically, we believe the federal government should designate the Coordinating Council on Juvenile Justice and Delinquency Prevention (CCJJD) to lead a multiagency effort in testing and taking this proposal to scale. Lead agencies would include the U.S. Department of Justice (DOJ); in particular the Office of Juvenile Justice and Delinquency Prevention, or OJJDP), the U.S. Department of Education, and the U.S. Department of Health and Human Services. The problem we are addressing and our proposed CBT solution both fall at the intersection of crime and education. The CCJJD is a perfect mechanism for bringing together the different federal agencies that are concerned with this problem.

The Administrator of the Council would draft a five-year strategy, including specific responsibilities and related budget requests for the relevant agencies. In consultation with the Council, the Administrator of the Council would propose an annual funding level of \$50 million for the implementation of these initiatives in the first and second years. The Administrator would propose an annual funding level of \$100 million in the third through fifth years. Agencies would incorporate these funding levels in their respective budgets.

During the first two years of this effort, the OJJDP would issue requests for proposals from nonprofits from across the country to provide 500 youths with a CBT-type program based on the BAM curriculum (initially placing priority on school-based programming). The focus would be on providing services to youths whose families have incomes below the federal poverty level. Deviations from the BAM curriculum would be permitted, to allow for adaptation to local contexts and to reflect lessons learned from local program innovations. This sort of planned variation would be critical to better understanding the ways in which the basic program design might need to be modified across settings to have maximum impact with diverse populations and in different settings. But of course not all variations from the

successful (so far) BAM model make sense—after all, there are not a lot of interventions for disadvantaged male youths that have been shown to be successful in randomized controlled trial studies, and so moving completely away from the model makes no sense. Interested nonprofits would need to explain and/or justify deviations from the BAM curriculum in the proposals. The Coordinating Council on Juvenile Justice and Delinquency Prevention would empower OJJDP and the National Institute of Child Health and Human Development (NICHD) to collaborate in carrying out peer review of the proposals submitted in response to the request for proposal (RFP). NICHD, which is part of the larger National Institutes of Health, has an outstanding scientific peer review process already in place for social science projects and would probably be the appropriate organization to lead the selection of grantees.

OJJDP and NICHD would select forty nonprofit organizations, one from each of forty different cities, to receive grants to provide services to 500 youths. OJJDP and NICHD would also grant funds for Youth Guidance (the BAM developer) to provide services to 500 youths per city in ten of the selected forty cities. The program evaluation would thus be able to compare the effects of “franchised BAM” to “original BAM” to see what, if anything, is lost in terms of program effectiveness through the franchise process. OJJDP and NICHD would give priority to selecting cities that have good administrative data infrastructure (particularly regarding student-level public school records and juvenile- and adult-arrest records) to facilitate low-cost impact evaluations. They would also give priority during the selection process to certain cities in order to ensure diversity with respect to city size, region of the country, racial/ethnic composition, and prevalence of social problems such as dropout and violent crime. NICHD would set aside \$2 million per year for evaluation and hold a peer-reviewed competition to select the evaluator. A condition of grant awards would be for recipients to work with the evaluator to identify 1,000 youths meeting the program’s eligibility criteria, of which 500 would be randomly selected for program participation. (In the ten cities in which both original and franchised BAM would operate, 1,500 youths would be identified: 500 would be randomly assigned to original BAM, 500 would be assigned to franchised BAM, and the remaining 500 would serve as the control group.)

In the third through fifth years of this effort, the same demonstration-and-evaluation process would continue in an expanded way. OJJDP would issue another RFP, and again select forty grantees. We recommend that OJJDP select the same forty cities and grantees as were selected during the original RFP process carried out during the first two years, as described above. At the same time, we propose that the OJJDP issue an additional forty grants, with 500 youths per grantee. For these additional forty grants, we recommend that OJJDP give priority to grantees that would work in the same forty

cities selected in the original RFP, but who would provide BAM-like CBT to youths outside of school settings: in local community centers or alternative schools; at GED programs reaching youths no longer enrolled in school; in pretrial detention, adult jail, juvenile or adult prison; or to youths on probation or in parole settings. NICHD would continue to have a competitively selected evaluator carry out the most rigorous possible randomized experimental evaluation.

Expanding the frame to include youths outside of school settings is important because a small subset of all youths account for a disproportionately large share of all crime: one of the most important and widely reproduced findings in criminology is that about 6 percent of each birth cohort commits 60 to 70 percent of all violent crime committed by

cutbacks during precisely those times when they might be needed most—during economic downturns when crime rates go up. Only the federal government can run budget deficits and ensure funding levels are steady over time.

The scale of the demonstration project outlined above is intended to help address the major scientific and policy questions that are central to any attempt to successfully scale up and take this type of program nationwide. With 500 youths enrolled in programming in each of forty cities, the demonstration during the first two years would enable the NICHD evaluation team to generate a precise estimate for whether the programming was working on average across all forty cities, as well as city-specific estimates for the effects of the program version implemented in each city.<sup>14</sup> In those

cities where Youth Guidance was also delivering BAM in parallel to that of a local grantee, the NICHD evaluation team would have the ability to determine how much larger (or smaller) the program impact is between the local franchised (and perhaps slightly adapted) version of BAM and the original version of BAM. By funding the first wave of organizations to provide the program in schools over five years, the evaluation team could estimate the learning curve for organizations—that is, the team would estimate how much the program improves over time before it reaches its maximum effectiveness. The demonstration

## By running the demonstration in forty cities, the evaluators would be able to learn how different characteristics of the local context moderate program effects.

that cohort (Tracy, Wolfgang, and Figlio 1990; Wolfgang, Figlio, and Sellin 1972). Those high-rate offenders will disproportionately drop out of school during adolescence. We propose starting this intervention within schools in the first two years because of the challenges associated with mounting a multicity demonstration in the same sorts of school settings in which BAM has operated in Chicago. Learning from that process will help increase the likelihood of successfully running the demonstration project in these even-more-challenging circumstances outside of school.

We believe this initiative should be supported by the federal budget because at least some types of crime appear to be counter-cyclical (crime rates go up as economic conditions turn down), while spending by city or state governments, which by law cannot run budget deficits, is often pro-cyclical (local and state spending goes down as economic conditions turn down).<sup>13</sup> Put differently, any nationwide CBT program that relies on local and state funding would be vulnerable to

design in years three to five would allow evaluators to compare the social good per dollar spent from reaching youths outside of school settings versus reaching youths within schools.

By running the demonstration in forty cities, the evaluators would be able to learn how different characteristics of the local context moderate program effects.<sup>15</sup> Another advantage of running the demonstration in forty cities and allowing local program providers to have some flexibility in modifying the design of the program is to facilitate our understanding of the exact mechanisms through which the intervention works. Our hope would be that the NICHD-selected evaluator would carry out some in-person data collection to measure candidate mechanisms of action across sites—including measures of automaticity in youth behavior, measures of other plausible candidate mechanisms such as how connected youths feel to prosocial adults, and standard measures of other types of what economists call “non-cognitive” skills and psychologists call “social-cognitive” skills. With forty cities and many program

variants in operation across cities, including some cities where the original version of BAM is also in operation, evaluators could examine variation on youth behavior across cities and program variants to try to isolate the most important active ingredients through which these programs help youths.<sup>16</sup> This sort of information about mechanisms is critical to ensuring successful scale-up, since without understanding this, policymakers cannot tell local providers which specific program ingredients are absolutely necessary to include in order to make the program work.

After the fifth year, CCJJDJP would scale up the program nationally at a cost of about \$2 billion per year, enough to provide one year of program services to each youth living in poverty in the United States. This spending level would be enough to allow local program providers to designate about 10 percent of all program slots for youths whose family incomes are slightly above the normal eligibility limit (in this case the federal poverty level) but whose behavioral histories make them good candidates to benefit from the program. This sort of flexibility in enrollment eligibility is similar to what is done in the Head Start program for young children.

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## Chapter 4: Questions and Concerns

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**W**e propose that the federal government spend \$400 million for a five-year demonstration project (plus \$10 million total on evaluation) to identify the most-effective, locally tailored CBT programming for disadvantaged youths in selected cities, leading to an at-scale \$2 billion per year program thereafter. This is a lot of money in a very resource-constrained environment, and so such a proposal naturally raises a number of questions:

### DOES THIS PROGRAM REALLY WORK?

Given the great difficulty policymakers have experienced in identifying interventions that can help improve the life outcomes of disadvantaged youths, we recognize the considerable surprise in the idea that helping youths to basically just slow down and behave less automatically in critical situations might really help change such hard-to-change behaviors as crime and dropout. Were this strategy to have been tested in just one single study, we would be sympathetic to concerns that the findings might be a fluke. But the fact that we have now carried out four separate rigorous RCTs in Chicago, each with promising results, is encouraging, and seems unlikely to be due merely to chance.

It's true that the results are not completely and absolutely identical across the four studies. For example, the 2009–10 study of BAM (combined with after-school programming) found large violent-crime impacts during only the year the youths were in programming, while the summer 2012 study of BAM (combined with summer jobs) found large violent-crime impacts that persisted well into the next school year. The first study found large gains in schooling outcomes, while the second did not. The JTDC study of CBT has not yet examined the same set of CPS schooling data or violent-crime arrest records that were the focus of the previous BAM research.

But given how little is currently known about how to help disadvantaged youths, the very encouraging initial findings from these four separate RCTs, and the enormity of the underlying social problem, we believe there is a strong case to be made to move ahead and try this approach. We can learn more about program details through learning by doing as part of the scale up; it would be a mistake to sit back and let many more generations of disadvantaged youths suffer from high rates of dropout and delinquency or violence involvement if there were a possible solution.

### ISN'T THERE OTHER EVIDENCE OUT THERE ABOUT CBT?

The RCTs our team carried out in Chicago are not the first or only empirical studies of the effects of CBT on youths' behavioral outcomes like schooling and delinquency. Many previous studies examining CBT programs or related interventions have been carried out, often with federal-government support. Most of the systematic statistical summaries (meta-analyses) of the existing research on CBT suggest the strategy is promising. If we take those summaries at face value they seem to reinforce the argument for our proposal. While that evidence seems to support our case, our own examination of the individual studies that are analyzed in these literature reviews suggest there is less good evidence here than would initially appear. Most research studies included in this literature are nonexperimental and rely on weak research designs that may confound the effects of CBT programs with other differences in the background characteristics of youths who do or do not participate in such programs. A careful reading of the small number of RCTs that have been completed suggests that while the previous experiments yield mixed results, even the experiments are not of very good quality—including what looks like improperly carried out random assignment, or small sample sizes that limit the statistical power of the study to detect any actual intervention effects. (For a much more detailed discussion, see Heller and colleagues 2013, appendix).

Federal agencies like NIH and the U.S. Department of Education have supported some high-quality randomized experiments of interventions like this with younger children, such as the Fast Track intervention. The Fast Track program targeted young children who are at highest risk for behavior problems over their lifetimes. Youths were randomized into treatment and control conditions in multiple cities; the program helped address the social-cognitive and emotional coping skills of children, as well as how parents monitored children and managed their behavior. Youths received services from grades 1 through 10. Data from the Fast Track experiment showed encouraging initial impacts on behavioral outcomes for youths; these impacts seemed to fade out over time overall, although there are signs of persistent effects on children who were highest risk at baseline (Conduct Problems Prevention Research Group 2011).

## DO THESE EFFECTS PERSIST OVER TIME BEYOND THE PROGRAM PERIOD?

The evidence we have so far from our four randomized trials of BAM or CBT carried out in the Cook County JTDC yield somewhat mixed results in terms of the degree to which program effects on criminal behavior persist after the program ends. For example, our first randomized trial of BAM in 2009–10 found that violent crime was reduced by 44 percent during the program year among participants; that result does not seem to persist after youths stop participating in the program. Yet Sara Heller’s follow-up trial of BAM delivered to youths in the summer jobs program in 2012 seemed to find large (51 percent) reductions in violent crime for seven months after youths stopped participating in the program. The social costs of violent crime are so large that even a temporary reduction in violence among high-risk youth who are at the peak age for criminal behavior (the teenage years) can be enough for such programs to easily pass a benefit–cost test. But from the perspective of improving the lives of disadvantaged youths and the families trying to raise children in high-crime areas, there would obviously be great value in trying to better understand how to get impacts to persist more consistently over time.

We hope that the first five years of this proposed effort could be used to further learn under what conditions the effects on violent crime and schooling outcomes are most likely to persist. It could be the case that during the demonstration project some of the planned variation in program design that are tested across different cities might include some refresher courses (similar to booster shots), or even provide some youths with a double or even triple dosage of the programming (such as two or three years of programming rather than just one). The rigorous evaluation that we propose NICHHD help support and carry out would be able to determine what dosage generates the greatest social good per dollar spent.

## CAN THIS PROGRAM WORK FOR GIRLS?

We believe it might. Only one of the four previous RCTs carried out in Chicago (the summer jobs plus CBT experiment carried out by Sara Heller) included girls as well as boys in the study sample (about half of that study’s treatment group). The reduction in violent-crime arrests in that study when girls are examined alone is statistically significant, and we cannot reject the null hypothesis that the impact on violence is the same for girls as it is for boys. But there clearly remains some uncertainty on this issue since right now we have completed just one experiment with girls. This is one of the key open questions that the planned variation and evaluation that we propose for the scale-up period would help answer. Because rates of serious violent crimes are much lower for girls than for boys, it would be important to make sure the evaluation of the demonstration and scale-up include additional key outcomes such as teen pregnancy and births.

## WHAT AGE GROUP SHOULD BE TARGETED?

We don’t know. The Chicago-area provider we have worked with, Youth Guidance, is of the view that youths below the age of about twelve or thirteen are not yet cognitively capable of fully benefiting from CBT. Age twelve or thirteen is also when rates of truancy and crime involvement begin to increase, so there could be an argument for serving youths at that point. On the other hand, if it turns out that the effects of this intervention decay over time, as has been found with so many other social interventions, then there may be value in concentrating the treatment “dose” a bit later in adolescence when the most socially costly behaviors like dropout, fertility, and crime involvement are concentrated. The age-crime curve (that is, the arrest rate for a given age group) for most types of crimes usually peaks around age eighteen, at which point many adolescents begin to give up crime involvement on their own (and after which most youths also would no longer be enrolled in K–12 schooling, and so could not be served by a school-based intervention). We would need to learn more about the tradeoffs associated with targeting different ages in the age range of twelve to eighteen during scale-up and study. Varying the exact age in adolescence at which youths participate in programming could be one of the key design variations that local providers could choose to modify across cities.

## CAN THIS INTERVENTION WORK FOR ALL RACE AND ETHNIC GROUPS?

We don’t know. We believe the answer is yes, but the two groups that constitute the majority of the study samples involved in the four previous RCTs of CBT in Chicago are black students and Hispanic students. The biggest open question at this point, one that again would need to be answered as part of the scale-up and study, is whether the program can be effective for low-income whites and those of other ethnicities, as well as for blacks and Hispanics.

## WHAT SORTS OF PROGRAM PROVIDERS ARE NEEDED TO MAKE THIS WORK?

The fact that we see encouraging results from both the BAM version of CBT—which exhibited a strong preference for providers who had at least some prior educational background in either psychology or social work—and the JTDC version of CBT—which trained detention-center staff to deliver the CBT—suggests that educational credentials in psychology or a related field might be a strong predictor of success (although at this point that is a hypothesis, not a fact, and needs to be tested during scale-up). What is clear is that both the BAM and JTDC versions of CBT prioritize providers who are able to get youths to engage in the programming and participate in discussion and other activities, which we believe to be key to success. CBT seems likely to work only if youths are actively engaged in thinking about their thinking.

## WHICH YOUTHS SHOULD THE PROGRAM TARGET?

Our initial proposal is to provide this program to all low-income adolescents in the United States. Right now many policymakers and practitioners believe that the greatest social good comes from targeting those youths at highest risk for dropout, violence, or whatever other adverse outcome is of policy concern. Their intuition is that these youths will benefit the most, but this need not be the case. If the goal is to generate the largest amount of social good per dollar spent, then the key question is which youths experience the largest reduction in risk in response to the intervention, and not which youth's baseline risk is highest. It could be the case that the highest-risk youths benefit the most, but that might not be true.<sup>17</sup> Serving youths with a wide range of baseline risk levels would allow policymakers to better understand how baseline risk levels do or do not help predict benefit from participation in programming.

The demonstration project may identify subgroups of youths who benefit more, and so might be prioritized for whatever intervention resources are available. (For example, those youths who benefit the most might be targeted for more-intensive services or invited to participate in the program for more than one year.) This is an important priority for the evaluation component.

## ARE THERE ANY OFFSETS THAT COULD BE USED TO HELP PAY FOR THIS PROGRAM?

For fiscal year 2014, the Department of Justice is requesting \$15 million to support the training of law enforcement officers, school officials, and other first responders on how to deal with active shooter situations, and another \$150 million to support states to hire additional school resource officers and to purchase equipment to prevent mass shootings (DOJ 2012). We could hardly be more sympathetic to the devastation of school shootings, and indeed to the trauma of these events for every parent in America with young children (as one of us is as well). But the number of school-age children lost to mass shootings in our public schools does not even remotely compare to the numbers lost to gun violence every year on the streets of our cities—what Mayor Tom Barrett of Milwaukee has called “slow-motion mass murders” (Dionne 2013). Funding of \$165 million per year would be more than enough to cover the full costs of the five-year demonstration and evaluation phase of our proposal, and even in the later years would begin to cover the costs of the scaled-up national program.

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## Chapter 5: Conclusion

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Remarkably few previous interventions have been proven to be successful in helping improve the life outcomes of disadvantaged youths, particularly males.<sup>18</sup> The difficulty of finding successful interventions leads naturally to the conclusion that outcomes for this target population are hard to change, which surely contributes to the growing sense within the social policy field that the best way (or, to some, the only way) to intervene and help low-income children and youths is by intervening during early childhood. While previous studies have found encouraging results from early childhood programs, they are not a panacea (see, e.g., Campbell et al. 2002; Chetty et al. 2011; Currie and Thomas 1995; Deming 2009; Garces, Thomas, and Currie 2002; Lochner 2011; Ludwig and Miller 2007; Olds et al. 1999; Schweinhart et al. 2005). For example, although the widely cited Perry Preschool program improved high school GPA by fully 0.42 points, the GPA of the treatment group (those children who received Perry Preschool) was still just 2.03 on a 4.0 scale, and fully 35 percent of youths who received Perry still dropped out of high school (Schweinhart et al. 2005).<sup>19</sup>

The idea that animates our proposal is that previous interventions for disadvantaged youths are not more effective because they are aiming at the wrong target. They often try to either change youth behavior by changing the long-term consequences (benefits or costs) of different behavioral choices like schooling or crime involvement, or they try to work with youths to build social-emotional skills. We believe that an important contributor to socially harmful outcomes is automatic behavior that sometimes leads youths to fail to apply the social-emotional skills they already have to certain situations. Acting too automatically leads youths to apply a learned response that is adaptive for other situations to the wrong situation, and fail to adequately recognize what situation they are in and what response is called for.

In 2012 the two of us were visiting the JTDC and talking to a staff member about their CBT programming. He told us, “Twenty percent of our residents are criminals; they just need to be locked up. But the other 80 percent, I always tell them—if I could give them back just ten minutes of their lives, most of them wouldn’t be here.”<sup>20</sup> Our proposal basically is to help youths slow down and behave less automatically during those key ten-minute windows.

The propensity to engage in automatic behavior is not unique to disadvantaged youths, although the consequences can be quite severe. For most of us, automatic behavior might lead us to pull on a door when we should push just because the door has large handles (Thaler and Sunstein 2008). We have had the advantages of living throughout our lives in environments in which there is a great deal of consistency across situations in terms of which automatic response is adaptive. Our teachers told us in school “don’t fight,” and outside school our parents told us “don’t fight.” But for youths growing up in very distressed urban neighborhoods where the criminal justice system and other order-maintenance institutions are frequently overwhelmed, deterrence often needs to be established privately on an individual basis. Giving up one’s lunch today on the walk to school may lead to the loss of a jacket tomorrow and an iPhone the day after. For families with very low incomes, replacement of a stolen item is not an option. It thus may be entirely rational for parents to teach their children—who are growing up in distressed, dangerous urban areas—to fight whenever challenged. But then the admonition “don’t fight” from the teacher conflicts with the advice of parents. This is not necessarily an example of bad parenting, but rather a recognition that what is adaptive in the out-of-school environment may differ across neighborhoods. The consequence, though, is that it is easy to see for many low-income youths why “fight” and “don’t fight” scenarios become hard to distinguish, and how the consequences of getting this differentiation wrong can be disastrous when gangs and guns are present.

The possibility that so many problematic youth behaviors may stem from intuitive or automatic decision-making is distressing to contemplate, given that so much public policy has been set up under the assumption that youths are thinking carefully about what they are doing. We have developed a world in which a bad decision in a key ten-minute window can lead to a lasting adverse deflection of one’s entire life trajectory. This is how we have wound up with 2.2 million people behind bars in the United States. The encouraging news is that the growing body of research in psychology and behavioral economics, including work on CBT specifically, suggests there may be lower-cost and more-humane ways of reducing the social harms from youths’ bad decisions while simultaneously improving the long-term life outcomes of the disadvantaged youths themselves.

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# Endnotes

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1. For example, the U.S. Department of Education's What Works Clearinghouse does not give a single dropout-prevention program its top rating of "strong effects" (defined as several randomized experiments or quasi-experiments all pointing in the same direction, or one large randomized experiment). The Coalition for Evidence-Based Policy does not list a single program for high school graduation among its top tier of programs (Coalition for Evidence-Based Policy 2012).
2. David Jackson, Gary Marx, and Alex Richards, "An Empty-Desk Epidemic," *Chicago Tribune*, November 11, 2012, <http://www.chicagotribune.com/news/local/ct-met-truancy-mainbar-20121111,0,5100452,full.story>.
3. Research shows that increased absences as early as third grade could help distinguish potential high school dropouts with 66 percent accuracy. By the fifth grade, students who eventually drop out of high school are absent twice as often as students who eventually graduate; by ninth grade the former are absent three times as often as the latter (Barrington and Hendricks 1989).
4. Figures are for nonelderly years of potential life. See CDC (2014).
5. In 2011 there were 433 homicides in Chicago. The motivations in 121 of these cases were unknown to police; the police attributed 219 of the remaining 312 homicides to an altercation.
6. As noted above, the high school graduation rate has changed very little since the 1970s. Pinker (2011) shows that while the homicide rate in the United States as a whole exhibits a great deal of year-to-year variability, the rate today is not much different from what it was in 1950—or, put differently, that there has been almost no long-term progress for the past sixty years. This stands in stark contrast to the dramatic reductions in mortality rates we have seen in the United States since 1950 in most leading causes of death.
7. These are not the first empirical studies of the effects of CBT on youth behavioral outcomes like schooling and delinquency, with many of the previous studies having been carried out with federal government support. While most of the previous meta-analyses of CBT studies suggest the strategy is promising, those meta-analyses pool together the relatively small number of randomized controlled trials that have been done in this literature with the large number of nonexperimental studies that rely on weak research designs, and so may well yield misleading conclusions. A careful reading of the small number of RCTs that have been done suggests that while the previous experiments yield mixed results, even the experiments are not of very good quality—including what looks like improperly carried out random assignment, or small sample sizes that limit the statistical power of the study to detect any actual intervention effects. For more discussion, see the appendix to Heller et al. (2013). Federal agencies like the National Institutes of Health (NIH) and the U.S. Department of Education have supported some high-quality randomized experiments of interventions like this with younger children. For example, the Fast Track intervention showed encouraging initial impacts on behavioral outcomes for youths that seemed to fade out over time overall, although there are signs of persistent effects on those children who were highest risk at baseline (Conduct Problems Prevention Research Group 2011).
8. The costs of BAM the way it was implemented in the 2009–10 experiment was an average of \$1,100 per participant (2010 dollars). As described in detail in Heller and colleagues (2013), benefit–cost ratios are calculated by monetizing the social costs of crime and multiplying those social costs by the number of crimes prevented by the intervention. These sorts of calculations can be very sensitive to the social cost one uses for homicide, which tends to be much higher than for other crimes, so we carried out a sensitivity analysis. The lower-bound value of the social cost of crime using a very conservative cost of crime implies a benefit–cost ratio of about 5:1 (social costs of crime averted equal to \$5,300 per participant), while an upper bound using the standard off-the-shelf estimates for the social cost of homicides equals \$33,300, implying a benefit–cost ratio of about 30:1. If the schooling outcomes we observe here persist all the way through the end of high school and translate into increased high school graduation rates of anything like the size of what we forecast from our initial two-year data, the benefit–cost ratio for this intervention could be as high as about 80:1.
9. The high-dosage academic remediation consisted of daily two-on-one tutoring modeled after the Match Education high-dosage tutoring program studied by Roland Fryer in Houston (Fryer 2011).
10. We used data from the 2009–10 RCT of BAM to estimate the correlation between CPS measures for absences, suspensions, and number of course failures with subsequent arrests for the first year after random assignment and for two years following random assignment. The observed impacts in our 2012–13 RCT on CPS student-level school records imply reductions in violent crime arrests of 31 percent in year 1 and 26 percent over the first two years, with reductions in a broader set of crimes (violent, drug, property, or weapons offenses) of 34 percent in year 1 and 31 percent through the first two years after random assignment.
11. U.S. Census Bureau data suggest that as of 2012 there were about 314 million people in the United States, of whom 23.5 percent are seventeen years old and younger (about 74 million people), so that each birth cohort contains about 4.1 million people (Census Bureau 2014). The current poverty rate in the United States as a whole is 14 percent, but is around 22 percent for people under 18, so that in each birth cohort there are about 900,000 people living in households with incomes below the federal poverty level. The BAM program we tested in Chicago reported on by Heller and colleagues (2013) had a cost of about \$1,100 per participant. In our more-recent work with Youth Guidance in Chicago the updated cost per participant is closer to \$2,000. If we assume a cost of \$2,000 per participant, the aggregate cost per birth cohort would be around \$1.8 billion. We estimate an average annual cost for the program at scale that is \$2 billion to recognize that in the real world program providers may also wish to designate for participation some youths whose family incomes are slightly above the normal eligibility limit (in this case the federal poverty level), but whose behavioral histories make them good candidates to benefit from the program. This practice is not so different from what is done under the federal government's Head Start program.
12. Currie (2006) reports that total safety net spending in 2002 for families with children was about \$170.1 billion, or about \$220 billion in 2013 dollars.
13. Raphael and Winter-Ebmer (2001) find that economic downturns as measured by unemployment rates increase property crime rates (about a 1 to 5 percent increase in property crimes for each extra 1 percentage point in the unemployment rate), but that there is a very weak relationship between economic conditions and violent crime. Bushway, Cook, and Phillips (2013) find that burglary (classified as a property crime) and robbery (classified as a violent crime) are pro-cyclical, whereas auto theft (classified as property crime) is counter-cyclical; homicide appears to have little consistent relationship to economic conditions. As Levitt (2004) notes, to the extent to which economic conditions have an important effect on crime it is likely to be through effects on local and state spending levels, which is usually controlled for in studies of economic conditions and crime (in the form of criminal justice spending).
14. With 500 youths assigned to receive programming in each site and 500 youths randomly assigned to a control condition, the minimum detectable effects, which is the minimum effect size (in standard deviation units) that

the evaluators would have an 80 percent ex ante likelihood of detecting with their estimates, would be on the order of about 0.07 standard deviations or thereabouts for estimating the average effect across all forty cities. The minimum detectable effects for the city-specific estimates would be on the order of 0.14 to 0.18 standard deviations, depending on the explanatory power of any baseline covariates that were available. (We assume a range for the partial R-squared of those baseline covariates from 0 to 0.4.)

15. Work by Howard Bloom and Stephen Raudenbush carried out with support from the William T. Grant Foundation suggests that in a site-level randomized trial like this, with fifty sites and 500 total people per site (treatment and control) the minimum detectable effects for a binary site-level moderator would be on the order of 0.12 standard deviations. Our design has slightly fewer sites but far more people per site, so we expect our minimum detectable effects for this moderator to be around the same (Bloom 2013).
16. For a discussion of this methodology, see Kling, Liebman, and Katz (2007) and Reardon and Raudenbush (2013). For an application of this approach, see Ludwig and Kling (2007).
17. Suppose, for example, policymakers are concerned about just one single outcome (such as violent-crime arrest). Consider youths at very high risk, whose baseline risk for violence involvement is 20 percent, and youths at lower risk, whose baseline risk for violence is 10 percent. If the effect of the intervention is proportional to the baseline risk—for example, if program participation reduces each youth's risk of violence involvement by half—then the highest-risk youths would indeed benefit more (their risk declines from 20 to 10 percent, for a reduction of 10 percentage points, while the

lower-risk youths' risk goes from 10 to 5 percent, or 5 points). But it could be the case that the highest-risk youths do not benefit as much as lower-risk youths, for example perhaps because they are harder to recruit into programming or to keep engaged once in the program. If program participation causes the risks to change from 20 to 18 (2 points) for the highest-risk youths and from 10 to 2 (8 points) for lower-risk youths, then policymakers would get four times as much social impact per dollar spent if intervention resources were prioritized on lower-risk rather than higher-risk youths. At present we know relatively little about this question; previous meta-analyses of intervention programs often find that youths with a larger number of prior arrests (except for violent-crime arrests) seem to benefit more, but those meta-analyses pool together studies of mixed scientific quality.

18. For example, Blueprints for Violence Prevention at the University of Colorado ([www.blueprintsprograms.com](http://www.blueprintsprograms.com)) reviewed the available evidence for over 1,000 programs. The number of interventions deemed to be model programs for adolescents equaled just ten, of which one (brief alcohol screening and intervention for college students) is used to focus only on changing alcohol use, another is used only with pregnant first-time teen mothers (nurse-family partnership), and two more are used with specialized populations (multidimensional treatment foster care and the new beginnings intervention for children of divorce). Others include functional family therapy and multisystemic therapy discussed in table 2.
19. The 0.42 finding had a p-value less than 0.5.
20. Personal communication, JTDC team leader Darrien McKinney to Jens Ludwig, Sendhil Mullainathan, and Anuj Shah, October 18, 2012.

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## Highlights

Jens Ludwig and Anuj Shah, both of the University of Chicago, propose a federal government scale-up of cognitive behavioral therapy (CBT) programming. This expansion is intended to help disadvantaged youths recognize those situations in which their automatic responses are likely to be maladaptive and could lead to trouble, and to help them slow down and act more deliberately.

## The Proposal

**Establish a multiagency effort to test and expand this proposal.** The Administrator of the Coordinating Council on Juvenile Justice and Delinquency Prevention (CCJJDP) would draft a five-year strategy, including specific responsibilities and related budget requests for relevant government agencies.

**Provide youths across the country with a CBT-type program based on the Becoming a Man (BAM) curriculum.** The Office of Juvenile Justice and Delinquency Prevention (OJJDP) within the U.S. Department of Justice would issue requests for proposals and then select nonprofit organizations from different cities to receive grants to provide services to youths in school. The focus would be on providing services to youths whose families have incomes below the federal poverty level. OJJDP would accept deviations from the BAM curriculum to account for local contexts and to reflect lessons learned from earlier program innovations.

**Continue the expansion of CBT programming around the country for five years.** The OJJDP would issue additional grants to provide more CBT programming to youths in school and outside school settings (e.g., in local community centers, alternative schools or GED programs, pretrial detention, and juvenile or adult prison).

**Perform rigorous evaluation to learn more about how best to implement the programs.** An evaluator—competitively selected by the National Institute of Child Health and Human Development—would carry out the most rigorous possible randomized experimental evaluation to learn more about how to most effectively implement (and, if needed, modify) the program in different contexts across the country.

## Benefits

The evidence from four separate randomized control trials administered in Chicago, especially the Becoming a Man (BAM) program, show that CBT can have positive impacts on the outcomes of disadvantaged youths; it can significantly reduce arrests for violent crimes and boost expected graduation rates. The evidence also suggests that this type of behavioral intervention can yield as much as \$30 in social benefits for each \$1 invested. Even the most successful government programs rarely have benefit–cost ratios in this range, particularly programs targeted toward disadvantaged youths. After scaling up the program for five years, the goal would be to provide one year of program services to each youth in this country who lives in poverty.



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