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Organization and the Executive Assistant in Your Child's Brain

Among the many perks your child was granted upon his entry into this world was free use of a full-time executive assistant: you. You organized his toys, managed his social schedule, got him to doctors' appointments on time, and made sure he always had everything he needed when he needed it. As preschool rolled around, some small expectations may have been put in place for your child to use his own organizational skills—the time management of getting his shoes on before leaving for school, or the planned thinking required in gathering all the Legos he needed for his latest masterpiece—but for the most part, your role remained unchanged.

If you are reading this book, it is likely that your role as executive assistant continues to remain unchanged (or at least has changed less than you would like it to). The difference is that as your child got older, there were more expectations for her to develop organizational skills on her own—to use the executive assistant in her brain, rather than the one yelling reminders from the kitchen. And as your child's classmates slowly developed increasing independence in response to each of the demands placed on them, your child began to fall further behind. And you became more concerned, more frustrated, and more convinced that there was something different going on with your child.

The three of us are all parents, and so those feelings of concern and frustration are things we can easily relate to. But it was that third response—the idea that something developmentally different was happening here—that sparked our interest as clinical psychologists. We, along with our colleagues

at the Child Study Center at the New York University (NYU) Langone Medical Center, kept encountering kids who followed a similar pattern. These kids forgot to write down their assignments; lost their papers, coats, and lunchboxes; took hours to finish homework; and saved long-term work until the last minute. They weren't any different from their peers in their academic abilities—in fact, some were among the brightest we'd seen in our practice—but their grades usually didn't match their potential. And while many had been labeled lazy or lacking in work ethic, it was clear this wasn't the case. Most found organizing so difficult that they were putting in twice the effort for half the results. As clinicians charged with helping kids become their best selves, we wanted to find a way to help these students and their families. As researchers, we wanted to understand precisely what these difficulties were, why they occurred, and how to develop and test the best way to strengthen organizational skills in these children.

Thus began the Organizational Skills Training (OST) research program at the Child Study Center over 15 years ago, under the leadership of Dr. Howard Abikoff, a world-renowned clinical researcher who had spent the prior 30 years studying attention and behavior control problems. Each of us has been involved in various facets of the program over the past 15-plus years: Dr. Gallagher as a major collaborator in developing ways to measure organizational skills, creating the treatments upon which this book is based, and training therapists to implement the treatment; Dr. Spira as a clinician in the research trials and a coauthor of the manual for therapists; and Dr. Rosenblatt as a research clinician helping to adapt the elementary school treatment for use with middle schoolers. We have also all spent many hours working with children, teens, and their families in the Child Study Center clinical offices, using the lessons learned from the research program to help them develop skills in organization, time management, and planning.

These lessons, distilled and refined from our years of research and clinical work, are presented in this book. We'll talk more about the development of our program, the OST program, in a bit. But first let's start where the research program started all those years ago: taking a close look at what we know (and don't know) about the development of organizational skills in children.

How Organizational Skills Develop

When your child was in preschool, you may have been the major organizational force in your child's life, but at least you weren't alone. You could

commiserate with other parents at the playground about the challenges of remembering to pack for show-and-tell on Thursdays, or tracking down a gluten-free, dairy-free, nut-free cupcake mix for the holiday party. But as children age, the expectation is for them to take more of these responsibilities onto their own shoulders. As your child moves through the grades, first-day-of-school instructions might look something like this:

- **Third grade:** “For this year, you will get a list of the homework assignments at the start of the week. We’ll put that list in your take-home folder, along with any handouts you need. Announcements will be e-mailed home.”

- **Fifth grade:** “We’ll start using a planner this year. You will use your planner to write down your assignments, test dates, and due dates for projects. Today I’ll teach you how to use your planner, and then every day from now on I will tell you what your assignment is and remind you to record it.”

- **Seventh grade:**

- *Social Studies:* “Today’s assignment is to read Chapter 1 and answer the questions at the end of the chapter. Every other day you will find your homework listed in the box on the whiteboard.”
- *Math:* “I’ve set up a class website. Check under the ‘Section 3’ tab every day to find your homework.”

At home, a similar pattern of growing independence is typically taking place. Even the most organized young children rely on their parents for quite a lot: carefully scheduling playdates, extracurricular activities, doctors’ appointments, and school obligations; packing lunchboxes and backpacks; and keeping drawers and closets stocked with weather-appropriate clothes and at least moderately organized toys. When children are very young (generally about seven years old or younger), even those who are developing organizational skills along a typical path cannot perform most of these actions on their own, without explicit instructions and lots of support from an adult. For example, you can usually teach a six-year-old to routinely put dirty clothes in a hamper (a one-step action), but most six-year-olds cannot independently perform an entire before-bedtime routine (bathe, put clothes in the hamper, get into pajamas, and brush teeth). As children begin to move into later childhood and the preteen years, though, many of these responsibilities begin to fall on their shoulders.

These increasing expectations, coupled with decreasing support from

adults, are rooted in a fundamental educational concept called “scaffolding,” based on the work of developmental psychologist Lev Vygotsky. Scaffolding refers to a method of teaching in which teachers put strong supports in place when students are first developing a skill (analogous to the scaffolding that supports a new building as it is being constructed), and then gradually remove these supports as the students become able to perform the skill independently.

Very little research has looked directly at how organizational skills typically unfold over time, but the patterns of scaffolding typically used by teachers give us good clues. The frameworks of increasing expectations tend to be largely similar across schools and classrooms, and are based on educators’ experiences of what the majority of children are capable of handling at each grade level.

In **elementary school**, teachers usually have begun expecting students to have their desks organized, to use their working time wisely, and to start planning and sequencing steps to complete tasks. Students typically are responsible for having their books and homework with them when they arrive home from school, and for completing their homework without too much dawdling. Elementary school students need to keep track of the homework assigned each day. They are often also given their first structured long-term assignments, in which they are expected to spread work out over a few days.

By **middle school**, there is less “hand-holding” in regard to organization and time management. More often than not, students are expected to complete organizational tasks with no more help than a few brief reminders, while juggling homework and projects of increasing complexity.

And once kids hit **high school**, near-complete independence is expected for organizational functioning. Students are responsible for having everything they need on hand, for knowing their deadlines and their schedule, and for planning to avoid a last-minute rush on long-term assignments and tests.

At **home**, a parallel process is usually taking place. A child whose organizational skills are developing along typical lines moves from getting a jersey pulled over her head and cleats tied on her feet before being plunked into the car seat for soccer practice, to packing her own water bottle, shin guards, and ball and independently getting ready on time. She also begins to call friends herself to schedule sleepovers and check ahead of time for something good to watch together on Netflix.

But as you know all too well, this may be the pattern of development for *most* kids, but not *all* kids. In fact, you may be surprised (and possibly

relieved) to know just how far from “all kids” it is: Our research has found that between 15 and 20% of children have deficits in organization, time management, and planning behaviors. So what is going on? Why are these kids different?

Executive Functions: The Operating System for Organizational Skills

Think back to any skills your child may have picked up pretty easily, without much help from the adults around him. Maybe he was singing along with the radio when other kids could barely manage “Mary Had a Little Lamb.” Or maybe he figured out how to climb to the top of the monkey bars while others were still just tottering around, or was speaking in full sentences well before his peers. In any of these cases, he was likely born with particularly strong functioning in an area of his brain that helped that skill come more naturally to him. All children have different patterns of cognitive strengths, as well as areas of relative weakness where they need more support to develop their skills. For kids with organizational skills deficits, the most likely areas of weakness are problems with what we call “executive functions.”

Executive functions are a collection of simple and complex brain activities we use to:

- Select goals for our actions, based on cues from our environment.
- Develop plans to reach those goals.
- Carry out those plans until the goals are accomplished.

A goal can be as simple as turning on a light, and the plan may be simply to get up, walk over to the light switch, and flip it on. Or it can be as complicated as figuring out how to get one kid to drama practice and another over to a friend's house and still make it to a work meeting on time, all mulled over while packing two lunches that don't contain any of the things your children have decided this week that they can't stand. More to the point, executive functions are at play when your child is remembering to look to the whiteboard for her homework assignment, organizing her room, or planning for a long-term assignment.

The executive functions have been found to be strongly related to life and school success. Children with strong executive functions have advantages in social behavior, in family relationships, in school, and in career

success down the line. They know what tasks are important (filing an important paper in the correct folder before leaving class vs. getting to the hall as quickly as possible to hear the end of that funny story Dylan was telling); they know how to develop a plan to complete those tasks (doing a report a little bit each night vs. waiting to complete it in a crazed, Dr-Pepper-fueled all-nighter); they are flexible when they encounter unexpected challenges (calling a friend when an assignment is unclear vs. abandoning hope and retreating to the Xbox); and they stay focused on what they need to do to complete a task (working diligently until homework is done vs. “Hey—squirrel!”).

The precise understanding of executive functions is still an active area of research, and there is much we still don't know. Over the past 50-plus years, scientists have proposed and debated a large list of possible executive functions, and they have yet to whittle down that list to an agreed-upon group. But there are six executive functions that are both generally accepted among researchers and have a clear link to organizational skills: attention control, inhibition, working memory, shifting, planning, and time management. These are described in the table on the facing page.

All six of these functions seem to improve with age, and generally in a predictable sequence. Attention control capacity emerges first, followed by inhibition, both of which tend to become mature during the preschool and early school years. Working memory abilities advance during the elementary school years and continue a more gradual advance into adolescence. The capacity for flexibly shifting actions emerges in late childhood and continues to grow in adolescence and adult years. Planning and time management are less well understood, but become more accurate in adolescence and adulthood. This pattern of development dovetails nicely with the common patterns of scaffolding for organizational skills we see in schools: increasing expectations for writing down assignments, for example, as working memory begins to develop; juggling of work from multiple classes, beginning when students become better able to shift tasks; and the introduction of more long-term work as planning skills emerge.

The Executive Office: The Frontal Lobes

This growth is all happening by means of a few developmental processes in the brain. Important areas of the brain are making new connections to one another; other connections that are not useful fall away; and increased

Executive Functions Related to Organizational Skills

Executive function	Definition	Practical reflection
Attention control	Controlling where, when, and on what elements of the environment attention should be focused.	Listening to a request from an adult instead of listening to the TV or music; looking at a blackboard lesson instead of the student in the next seat; paying attention to a teacher giving a homework assignment instead of daydreams about playing with a friend.
Inhibition	Stopping a nearly reflexive action in favor of a more appropriate action.	Waiting to raise a hand to answer a question instead of calling out; reading a word slowly instead of stating the word based on its first three letters; putting away books in a backpack instead of joining a conversation about a favorite video game.
Working memory	Holding some information in mind while completing another step in a task, and then bringing back the information from memory.	Remembering the meaning contained in the first part of a sentence while working to sound out a new word; recalling what paper is required for math homework while putting a pencil case in a backpack.
Shifting	Flexibly responding to the environment so that one set of actions is set aside for another set that is more appropriate because of a change in the environment.	Working to change where one walks when the path is blocked; setting aside work on a writing assignment to answer a question from a teacher; stopping a conversation to pick up an important paper that has fallen off the desk.
Planning	Selecting a goal, determining what steps are needed to reach the goal, and monitoring the effects of behaviors to see if the goal is closer to being reached.	Deciding how to complete a homework assignment; creating a plan for a book report; making and following a plan to have a playdate.

(continued)

Executive Functions Related to Organizational Skills *(continued)*

Executive function	Definition	Practical reflection
Time management	Knowing approximately how long different activities take to complete; keeping actions focused on the goal so time is not lost; and fitting actions into the known schedule.	Estimating how long it will take to get to basketball practice and leaving at the right time; starting homework early and completing it in time to eat dinner and watch a favorite show; spreading out the steps for a school presentation over several days so that it is not rushed.

efficiency in useful connections occurs as the brain matures. The site of most of this action is the “frontal lobe,” the area of the human brain that is biggest as compared with the brains of other animals. Neuroscientists have been able to observe that the frontal lobes become more connected with themselves as well as with other essential brain centers during late childhood, adolescence, and adulthood. Those increases in connections are also associated with increases in behavioral, intellectual, and social development, including the executive functions. And the executive functions, in turn, are associated with the practical organization, time management, and planning skills that are the focus of this book.

But while we can describe the way an average brain develops, each child’s brain is unique. And for some children, these connections may not be made as easily as for others.

So . . . Did You Just Tell Me That My Child’s Brain Is Incapable of Organizing?

No! We told you that your child’s brain may not develop organizational skills along a typical path, so the methods usually used to teach organization, time management, and planning in school may not be a good fit for her. The question then becomes: How do we teach organizational skills in a way that is accessible to these kinds of brains? And this was the question that sparked our research program.

You have slogged through a decent amount of science with us at this point. (Thank you!) If you are starting to nod off, we’ll send you on your

way with the short version of the rest of the chapter (we tested it; it works) and your official “hall pass”: Proceed directly to Chapter 2. But if you have an interest in the research process that led to this book, or you'd like some data to sell you on all the hard work we are about to ask you to do, read on.

The NYU Organizational Skills Training Program

If you are still with us, you are a data nerd after our own hearts, so roll up your sleeves and let's get into the nitty-gritty.

When you want to try to solve a problem in a scientific way, the first thing you need to do is to make sure you have a way of measuring that problem. Otherwise, you have no way to gauge whether your solution is working. Fifteen-plus years ago, there was no reliable and valid way to measure organizational functioning. So Dr. Abikoff and Dr. Gallagher started by creating one.

The result was the Children's Organizational Skills Scales (COSS; Abikoff & Gallagher, 2009), a set of paper-and-pencil measures that used parent, teacher, and child ratings to establish where a child's organizational functioning fell in relation to the average student's. As part of the measure's development, the scales were administered to nearly 2,000 parents, teachers, and children. The primary purpose was to establish whether the measure was effective in reliably measuring organizational difficulties. But the data this generated also gave us a few insights into the nature of organizational deficits. One was that these deficits tended to group into three specific areas of functioning. For purposes of this guide, these areas can be described as follows:

1. *Using organized actions*: Use of organizational strategies and tools in order to keep aware of assignments and manage important items (such as using calendars, making outlines, and using folders).
2. *Lapses in memory and materials management*: Forgetting important information about assignments, losing important materials, or forgetting to pack needed items for homework.
3. *Task planning problems*: Failing to complete work on time, not getting to activities on time, and not knowing how to start, follow, or complete a plan.

As you can see in the table on the following page, each of these three areas of functioning requires several of the six executive functions.

Connecting Organization, Time Management, and Planning to Specific Executive Functions

Organizational skill	Situations	Executive functions required
Organization	<p>Tracking assignments and managing materials</p> <ul style="list-style-type: none"> • Recording assignments • Using calendars • Using checklists • Gathering, transferring, and storing papers, books, and other items • Clearing work spaces • Using lockers 	<ul style="list-style-type: none"> • Attention control • Inhibition • Shifting • Working memory
Time management	<p>Fitting activities into a schedule</p> <ul style="list-style-type: none"> • Estimating time needed • Recalling appointments and schedules • Fitting activities into a schedule • Watching the passage of time • Speeding up or slowing down activity • Avoiding the impact of distractions on use of time 	<ul style="list-style-type: none"> • Attention control • Inhibition • Shifting • Working memory • Time management • Aspects of planning
Planning	<p>Developing a plan and following it to completion</p> <p>Selecting a goal</p> <p>Spelling out the steps for carrying out the goal</p> <p>Determining what materials and resources are needed for each step</p> <p>Estimating time for each step</p> <p>Fitting steps into the schedule</p> <p>Modifying the plan based on early results</p> <p>Checking that all steps are completed appropriately</p>	<ul style="list-style-type: none"> • Attention control • Inhibition • Working memory • Shifting • Time management • Planning • Metacognition, or determining how to use certain thinking skills in carrying out a plan (as in, I need to pay attention to my math facts while I solve this problem)

The research on the COSS also gave us a better picture of those kids who tend to struggle with these organizational issues. These students were more likely to be:

- Younger.
- Boys.
- Children with learning disorders.
- Children with attention-deficit/hyperactivity disorder (ADHD).

Developing the Intervention

With the COSS in hand, the next step was to figure out how to take the kids who scored low on the scales and turn them into high-scoring kids. Since organizational deficits were so pervasive among children with ADHD, Dr. Abikoff and Dr. Gallagher focused on this population. Using both clinical wisdom and lessons learned from past research on elements that tend to be effective in clinical interventions in general, and in interventions for kids with ADHD specifically, they put together a program to teach students specific skills to meet the demands for *organization*, *time management*, and *planning* that children were most likely to face across a typical school day. They then began trying out the program, refining and adjusting in response to feedback from students, parents, and teachers. Ultimately, a few key elements were identified as being critical to understanding how to help students develop strong organizational skills:

- The day-to-day demands that were hampered by poor organizational skills fell into four practical areas: *tracking assignments*, *managing materials*, *managing time*, and *planning for long-term assignments*.
- Students needed frequent instruction and practice to make progress (clinical sessions were ultimately held twice a week).
- Students needed to learn one organizational skill at a time and not move on to the next until they had mastered the one they were working on.
- Students maintained motivation better when the adults helping them were patient, supportive, and positive.
- Children were better motivated for change when organizational problems were characterized as external challenges rather than internal deficits.

This last point is particularly important and worth a bit of elaboration. Too often, organizational problems are framed as character flaws: a lack of conscientiousness, work ethic, motivation. If one thing was clear from the early trials of the program, it was that this was not the case. Even kids who had internalized these messages, telling us that “I’m just lazy” or “I don’t try,” had actually spent significantly more effort over their lives trying (and failing) to become organized than their peers had. To address this feeling reported by so many of the kids we were working with—that something was “wrong” with them—Dr. Abikoff and Dr. Gallagher looked to successful treatments for problems like obsessive-compulsive disorder (OCD). These treatments used characters to represent the problem (such as an “OCD Monster”) as a way of making it external. This borrowing resulted in one of the most novel aspects of the OST program: a series of characters called the “Mastermind” (the good guy, representing a well-functioning frontal lobe) and the “Glitches” (mischievous creatures that try to get kids in trouble with messages like “Don’t write it down—you’ll remember,” or “You have plenty of time—do it later!”). We’ll go into much more detail about these characters in Chapter 3.

The Moment of Truth: Testing the OST Program

After years of development, Dr. Abikoff and Dr. Gallagher were awarded a grant from the National Institute of Mental Health to conduct a five-year study evaluating the effectiveness of OST. Students with ADHD and significant organizational skills difficulties (as rated by parents and teachers on the COSS) were recruited for a randomized, controlled trial. “Randomized” means that they were randomly assigned to treatment groups: One group received OST; another group received an alternate treatment focused on training parents to provide behavioral rewards for organizational skill performance; and a third group was placed on a wait list to receive treatment after the evaluation period. Students were evaluated before the start of treatment and then one month after the end of treatment. To see if the effects of treatment lasted over time, students were reevaluated one month into the following school year and again four months later.

Students in the first two groups showed significant improvement over the wait-list group, although OST showed advantages over parent training on some specific outcomes and was preferred by parents offered a choice between the two. Students participating in OST scored significantly higher than their wait-listed peers on measures of:

- Organization, time management, and planning (from the COSS).
- Completion of schoolwork at school.
- Family conflict.
- Efficient completion of homework at home.
- Retention of benefits into the next school year.

After the large-scale trial was completed, smaller projects were undertaken to adapt and test the materials for middle schoolers. This book presents the essential elements of the original OST program, as well as extensions based on the middle school work, along with some of the most effective strategies from the parent training program. The program and the research based on it are described in our book for therapists, *Organizational Skills Training for Children with ADHD*, and some of the forms and handouts in the present book are based on ones included in that book.

We'll end this chapter with the happy news that, as your child's executive assistant, it is time to hand in your two weeks' notice. (OK, maybe a bit more than two weeks, but still, your days are numbered.) We are now embarking on recruiting and intensively training a new executive assistant for your child—the one parked right up there in her frontal lobe.