8

"Do What I Do!"

Helping Your Child Learn by Imitating

Chapter goal: To encourage you to imitate your child's sounds, gestures, facial expressions, actions, and words, and to teach your child to imitate yours. Children learn by watching others and doing what they do.

Why Imitation Is So Important

Most young children are natural mimics. They copy what they see their parents do; they copy the sounds and the gestures their parents make and the words they say; they even copy how their parents walk and dress. They often favor imitating other children—especially their brothers and sisters, as well as kids who are the same age or a little older and whom they admire.

Imitation is a powerful learning tool for all of us. Our brains are set up to remember and learn from watching other people, and children remember what they see others do for a long time, even without practicing it. This means that children can imitate an action immediately after seeing someone else perform it, as in the often spontaneous games that even the youngest children play with siblings, friends, and parents. But they can also imitate it later, because they remember what they have observed.

This special capacity comes to us in part through brain cells called ***mirror neurons***, which link actions that we see others do to our own action patterns. With the help of mirror neurons, in a way we actually experience what we see others do: Mirror neurons fire in the brain both when we perform an action and when we see it performed. This means that, at least to a degree, a new action becomes a part of an observer's skill set before the observer actually imitates it. This is how we learn by watching and remembering. But we also learn by doing. So the seedling of a skill that resides in the child's brain because the child has watched and remembered that skill in action becomes more fully learned once the child starts putting it into action herself.

Children's neural capacity for imitation lets parents, siblings, grandparents, and others pass learning on to children without even trying or thinking about it. Skills of all kinds get passed from person to person, across generations, in an effortless fashion that allows each generation to start where the last one left off instead of starting over. Many people believe that imitation and language together are what have created the amazingly complex, rich cultures that people all over the globe have developed over thousands of years.

Imitation is an especially powerful tool for learning how to interact socially with others. This is because social behavior involves many complex and subtle rules, many of which we haven't consciously thought about. For example, when we are interacting with others, we naturally know how far or close we should stand apart from the other person; we unconsciously imitate the other person's facial expressions and gestures; and we time our responses so that the conversation has a natural ebb and flow. No one actually taught us to do this. We learned all of these social behaviors through imitation rather than through explicit instruction.

Children's almost automatic imitation of other people affects them in countless ways. When children (and adults) see another person's expression and emotions, their mirror neurons fire, allowing them to feel the other person's emotion. When they imitate another person's facial expression, they actually come to feel that emotion as well, allowing them to share the other person's inner feelings. Have you ever watched people's faces when they are watching an emotional movie? You can see the emotions of the actors played out on the faces of the people watching the movie. This ability to be emotionally connected to others through imitation happens even in toddlers. Children's almost automatic imitation of other people enriches them in countless ways:

- *It fosters empathy, which increases the capacity to learn from others.* When children imitate someone else's facial expression, doing so triggers the same emotion in them that they are observing. This happens even in toddlers, who can be seen to burst into tears themselves when they watch someone they know start to cry. You probably remember times when just seeing someone else in pain or distress has brought on the same feeling in you. You probably felt a wave of sympathy or empathy for that person and a desire to comfort or help. This helps people feel deeply connected to each other, which tends to increase the desire to pay attention to each other, which in turn increases the potential to learn from each other.
- *It helps children learn language.* When babies and toddlers imitate the sounds that they hear around them, using their own "baby talk," they are practicing making the sounds of their own language. Their ability to imitate parents' words allows them both to perceive and to express their native language.
- *It promotes nonverbal communication.* When young children imitate other

people's gestures and postures, they pick up all those extra cues that add meaning to speech—the ones we have talked about in Chapter 7. These nonverbal cues convey emotional meanings and let us express so much more than we can put into words.

- *It teaches them how things work*. When young children imitate others' actions on objects, they learn how things work, what they are, and what they are used for.
- *It helps them learn the social rules for conversations*. In a conversation, two people alternate between the roles of speaker and listener: Person A says something while Person B listens; then Person B responds to Person A's meaning, building on the topic; and so it continues. This kind of conversational structure also underlies imitation games. An adult bangs two blocks together and then pauses while the child reproduces this action, and then the adult does it again, and so forth, with variations added by either partner when the game gets boring. This is exactly what happens during conversations, and this kind of experience may actually help children learn the rules for conversation: Take turns, don't interrupt, stay on topic, keep it interesting for your partner, and so on.

What's Happening in Autism?

As you may have noticed, young children with ASD are much less inclined to imitate words, gestures, and actions than are other children their age. Even though they are very interested in objects and have lots of skills with objects, they tend not to imitate what other people do with objects very often.

There are a number of theories about the problems with imitation in ASD, but no definitive answers yet. Brain imaging studies have shown that although the mirror neuron system in children with autism is less active, it is not "broken"—meaning that, with proper experience, this system can become active and functional. This is one reason it is important to provide early intervention that promotes imitation skills. Possible reasons why children with autism don't naturally imitate others' gestures, facial expressions, and body movement are that they are not paying attention to others' movements or simply aren't motivated to imitate others (rather than being unable to). This is good news, because it means that by getting into your child's attention spotlight and helping to motivate your child to imitate you, you can awaken his mirror neuron system and help this part of his brain develop.

Why Is It a Problem?

If you look back at the list of enrichments that imitation makes possible, it's easy to see how much children who don't imitate others much can miss out on. We think, in fact, that the decreased motivation to imitate may be responsible for

a significant part of the delays most young children with ASD show in all areas of development. Imitation is one of the most important skills a young child with autism can learn, because it is such a learning tool by itself and helps children learn so many different types of skills. Children who do not imitate may miss much of the learning that just observing the goings-on in the social environment makes available. Without imitation, kids have to figure everything out anew, rather than learning from others the easiest and most effective ways to do things. For example, imagine how a child would learn a group game like hide and seek or "Red Rover" without using imitation to learn from other children. But even in a structured educational setting, the lack of imitation makes it harder to learn new skills, because children won't necessarily be able to pick up on quick, efficient modeling from teachers or therapists (or parents).

Imitating others also enhances social relationships. You know the saying "Imitation is the sincerest form of flattery"? Imitating a person we admire or enjoy (dressing or styling one's hair a particular way, playing with a certain toy, saying a funny word) creates a moment of sharing or connection between people. It elicits positive feelings in both partners. By extension, imitation is crucial for developing the ability to identify with important others and to share meaning and emotion with them.

What You Can Do to Teach Imitation to Your Child

Fortunately, it's clear from research that young children with ASD can learn to imitate others well and naturally when their own motivation and attention to imitate are increased. Several studies have shown that early intervention can increase the imitation abilities of children with autism. As with other behaviors (such as making eye contact and using gestures and words), when children with autism start paying attention to others' actions, are shown how to imitate others, and discover that imitating others is rewarding, they become more motivated to do it. In Chapter 4, we have discussed imitating what your child does as a way of joining your child and gaining her attention. In this chapter we are going farther and focusing on how you can teach your child to imitate different skills and behaviors inside your ongoing play and caregiving routines. There are five specific steps you can carry out to increase your child's imitation:

Step 1. Imitating sounds.

Step 2. Imitating actions on objects.

Step 3. Imitating hand gestures and body/facial movements.

Step 4. Imitating and expanding on actions.

Step 5. Putting imitation games into the joint activity frame.

In the following pages, we describe how to carry out each of these steps, give you some ideas for activities to try, and suggest what you can do to solve problems that may come up.

Step 1. Imitating Sounds

Rationale. Children who have not yet learned how to use words to communicate need to build a large repertoire of sounds, to learn how to make a sound intentionally, and to learn how to make specific sounds in order to get something they want (in a goal-directed fashion). Finally, they need to understand the full power of their voices as a way of achieving a variety of goals. Although we deal in depth with developing verbal communication in Chapter 13, here we focus on parents' use of imitation to achieve three things: (1) to help children notice their own vocalizations, (2) to increase the frequency of the sounds they are making, and (3) to increase their intentional production of sounds and specific vocalizations.

Activity: *Increase Your Child's Sounds by Echoing Them*

You may hear your child vocalizing, sometimes in response to something that has happened and sometimes "out of nowhere." Even if you're not sure what a sound means, imitating your child's sounds conveys to the child that you have heard him and that his vocalizations are meaningful and important. You're saying, "I heard you," to your child and assigning importance and meaning to the sound with your actions. Begin by positioning yourself so your child can see your face. Then imitate whatever vowel or consonant sounds or other sound effects your child emits (except for crying, screams, or whining) while playing with his voice. Now wait to see if your child makes the sound again. If he does, you now have the opportunity to imitate him again. With this back-and-forth interchange, you've created an imitation game! If he doesn't make the sound in return, try again, waiting expectantly. Eventually your child will repeat his sounds after your imitation. Developing some vocal imitation games is worth your persistence, since it's a critical step on the road to speech development.

Activity: *Sing Songs and Play Rhyming Word and Finger Games*

Singing songs and highlighting a key word or phrase in each verse helps your child start to hear the pattern and the important parts of the song. You might sing or say that target word or phrase a little louder or even slower, to help your child attend to its meaning. Add gestures and facial expressions to mark the targets. After singing the song verse in its entirety over a few days, so your child begins to recognize it, start to make a little space in the song for your child to join in. Come to the target word or phrase in the song and then wait, looking expectantly at your child, to cue the target. Your child might start to put in the

missing word by making a sound. If so, great! When you hear it, continue the song. Or, instead, when you pause, your child might make a small gesture, wiggle her body, give you a quick look, or provide some other cue that shows she wants to participate. If she does this, add the word after your child's cue and continue the song. This skill marks a milestone in speech development, and it is a very important type of activity for fostering verbal imitation. Develop a whole repertoire of songs, chants, and finger plays with your child.

For example, you could sing a song like "The Wheels on the Bus," emphasizing a key phrase: "The wheels on the bus go *round and round*, *round and round*, *round and round* (of course with the accompanying hand actions). The wheels on the bus go *round and round*, all through the town." "Round and round" is your target phrase. After singing the song a time or two, this time you would sing, "The wheels on the bus go [pause] . . . " and wait expectantly for your child to make a sound or at least some kind of nonverbal cue. Once he does, quickly and happily continue the song, singing, " . . . *round and round*, all through the town!"

Summary of Step 1

If you have followed along and carried out the preceding activities, you will have developed a new habit—that of imitating your preverbal child's sounds—and you and your child will be making progress in developing some vocal imitation games. These activities serve as a starting place for increasing your child's vocal imitation skills, and we will develop the next steps in a later chapter. For now, see if you agree with most of the statements in the following checklist. If so, you are now armed with important skills for teaching imitation—knowledge you will use in **Step 2**. If not, start experimenting during play and caregiving routines until you have found some methods that work for each statement.

Activity Checklist: Imitating Sounds

____ I pay attention to my child's sounds.
____ I imitate my child's sounds back to him or her when I hear them.
____ I have a repertoire of songs, finger plays, and other language activities that my child enjoys.
____ I know when to pause and wait in these games for my child to cue me or vocalize to continue the game.

Claire, age 3, has autism and occasionally makes sounds, although these are not directed to her parents. Her parents describe the sounds as more like exhales (e.g., "haa") than like attempts to communicate a word, and they haven't been sure how to respond to them. During one of Claire's favorite activities—making shapes out of play

dough—her dad begins to name the cookie cutter shapes and describe the actions as he makes animals out of play dough. He also adds sounds to the animals as he shows them to Claire: "Look, Claire, a doggie," "Doggie says 'woof woof,'" or "Bird goes 'tweet tweet.'" After repeating this theme a few times, Claire's dad pauses as he holds up the next animal and waits for Claire to imitate the sound. She doesn't, but that's okay, and Dad continues the activity anyway. But then, as Claire is looking down at the table and picking up the animal she's just made, she makes the exhaled sound.

Dad remembers what he has read in this chapter and imitates the sound right back. After a few seconds, Claire's dad repeats the sound again, but this time makes it a little deeper. Claire looks up and smiles slightly. Dad repeats the sound, exaggerating it even more. Claire's smile widens. Now Dad asks Claire, "Again?" and when she looks at him intently, he makes the sound again. This time he says to Claire, "You do it," and models the sound again. Claire opens her mouth slightly, but no sound comes out. Dad fills in the sound, and Claire continues to smile. Dad goes back to the play dough activity and holds up the dog, making it say "woof woof" again. As Claire reaches to take the dog from Dad, she makes the exhaled sound. It doesn't matter that she didn't look at Dad while making the sound. Her father imitates her sound, and she repeats it. He imitates it again, and she repeats it again. Vocal turn taking! He is delighted and imitates her sound, and then has the dog go "woof woof," which she loves.

"We also encouraged my son to speak by using animal noises. It's easy to make the noises fun, and they seem relatively easy to repeat, so playing animal noise games with a farm was a big part of our early attempts to encourage his speech."

Malik is a 26-month-old boy with autism who does not make sounds or speak and seems to drool constantly. His mother says he doesn't seem particularly interested in toys and prefers to suck or chew on them rather than engaging in play. She's not sure where to start in teaching vocal imitation to Malik, given his lack of interest in toys and his very limited speech and communication skills. After reviewing the Step 1 activity checklist, Malik's mother reads about the use of silly mouth games to stimulate motor movement and elicit sounds. She decides to try this, since toys or objects may not work with Malik right away.

She sits Malik in his chair and sits in front of him to ensure good face-to-face positioning. She starts a game by saying "oooaaahhh" while patting her mouth. Malik watches with curiosity, but he does not reach out. She makes the sound again on her own mouth and then pats Malik's mouth. He doesn't make the sound, but he does open his mouth slightly to stick out his tongue. She makes the sound for him as she pats his mouth and then goes back to her mouth, exaggerating the pitch and intensity of sound. She keeps alternating between her mouth and Malik's, pausing when it's Malik's turn to see if he'll imitate the sound.

Although Malik doesn't make the sound, he does continue to stick his tongue out, so Mom decides to vary the game and sticks her tongue out to wiggle back and

forth while saying "aaahhhhh." She's added a different action to see how Malik will respond. He continues to stare intently at Mom's face and show interest in the game. He sticks his tongue out again. Mom takes a turn wiggling her tongue, and he repeats it. She adds an "ahh" sound to her tongue movement, and he puts his tongue out again and makes a little noise. She is very excited about this development. She decides to practice these mouth games in other caregiving activities when Malik and she can be face to face, such as diapering and meals. Within a few days, he is reliably imitating her when she sticks out her tongue.

Step 2. Imitating Actions on Objects

Rationale. Imitating your child's actions with objects draws your child's attention to what you are doing, gives you a specific vocabulary of objects and actions for narrating your child's activity, and gives your child the sense of two people doing things together—that is, reciprocally. It takes turn taking to another step: imitating. It should increase the amount of time your child spends on socially coordinated activities, and will most likely increase your child's motivation to imitate your actions. Research by one of us authors (G. D.)[1] found that when parents imitate what their children are doing, children with autism start making more eye contact and smile at their parents more often during the imitative play. The children notice that their parents are imitating them and enjoy this game.

Imitating your child's actions with objects can also increase the flexible, creative, and varied nature of your child's play. Our goal in this step is for children with ASD to pay attention not only to the objects we're holding, but, more importantly, to what we do with them. Teaching them to imitate others gives them ways to learn on their own, and it also allows us to teach new skills through modeling, so we can provide them with new ways to play with objects and expand their repertoire of ideas and actions.

Here are some activities for increasing your child's imitation of actions performed on objects.

Activity: *Use Matching (Identical or Very Similar) Toys, or Multiple Pieces of Toys, to Teach Your Child to Imitate New Actions Quickly and Easily*

For this first activity, you will need some matching sets of objects available during various activities. Make sure that you are right in front of your child, and that your objects are positioned in front of her matching objects. Note that how quickly you move through the sequence of steps involving imitating your child will depend on how your child responds to each of the steps. If he quickly engages, watches you imitate, and begins imitating your actions, you could move

[1] Dawson, G., & Galpert, L. Mothers' use of imitative play for facilitating social responsiveness and toy play in young autistic children. *Development and Psychopathology, 2,* 151–162, 1990.

through each of these steps in your first session trying it. However, if your child doesn't watch you or doesn't readily imitate the actions you introduce, spend more time on each step (at least a day, if not longer) until you see the response you want, before moving on to the next step.

Here is the sequence for using matching or multiple-piece toys:

- Begin by imitating your child's actions with your own materials and labeling the objects and actions your child is using. For example, if your child is rolling a car back and forth, you would roll your car back and forth exactly as your child is doing it. When your child stops rolling his car, stop yours too. When he begins again, you begin again too. Your child is likely to start experimenting to see if he can get you to do whatever he is doing. He may smile and may even make eye contact, clearly enjoying the game and the power he has in making you do whatever he does!
- After you have imitated your child's actions precisely for a while, introduce a variation on the action you are performing. For example, you could roll the car more quickly or slowly, or roll the car on your body instead of the floor, and so on. Pause and wait expectantly, and see if she will spontaneously begin to imitate these new variations. All the while, remember to label the actions ("Car is rolling! Car is rolling fast! Car is rolling slowly. Car crashes!").
- After you have gone back and forth a few times, imitating your child by using the action he is doing or a variation on that action, change your action to a different one (of about the same difficulty level), and show your child your new action in a big display. Ideally, you would start by introducing another action that you have already seen your child perform with the object. For example, if you have previously seen your child both roll and bang a car and you have been imitating your child rolling the car, you could start to bang it. Label the action ("Bang-bang!") and repeat it a couple of times. If your child is interested in what you are doing, wait expectantly and see if your child imitates the action you introduced. If not, help (prompt) him to copy you. To prompt him to perform a new action with the toy, gently guide him through the new movement, with your hand over his hand.
- Once your child has made the new action, praise your child enthusiastically and let your child do what she wants to do for a minute with the toy. Imitate your child a few times and then show the new action again. Again make a big display, wait for your child to imitate you, prompt her to do so if needed, praise, and then let your child have control of the materials for a few minutes. This is the basic learning frame for teaching imitation of actions on objects.

Activity: *Use Double Sets of Toys*

Here are some ideas for using double sets of toys to teach imitation:

- Sets of musical instruments—such as two drums and two pairs of sticks, or two sets of maracas—can be used in fun activities with different actions to teach your child to imitate. Follow your child's actions for a few repetitions, and then model something different. Or, you can begin the game by tapping your drum with your sticks or shaking your maracas, and if your child doesn't naturally join in, then help him imitate the action. Take your turn again, making sure to add language, sound effects, or even a song. Then pause and encourage your child to carry out the action. Try to wait a second or two to see if your child will copy you. If he doesn't do it, prompt him to imitate, cheer him, and then after the imitation let your child play as he wishes for a few minutes.
- Another way, useful for introducing a new instrument, is for you to hold on to both sets of items and model for your child how to use the instrument (be sure you are demonstrating an action you know your child can do). Then hand the matching instrument to your child for her to imitate (the reinforcer here is the interesting sound the instrument makes). If she does not try to imitate you quickly, prompt her to do so. If she tries but can't quite do it, help her complete the imitation. Comment enthusiastically (e.g., "You banged it!") and do the action again. Keep taking turns, and when these actions become a little repetitive or dull, switch it up: Bang the drum with your hand instead of the sticks or use the maracas to bang on the floor. Then continue the turn taking to help your child imitate these new actions.
- Toys with multiple pieces (like trains, blocks, balls, or puzzles) can also be used to teach object imitation. You may need to limit the pieces to just a few at first to help your child focus his attention on you. See what action your child does with the item first, and then imitate it back with your object, adding simple language to narrate the activity. After a few rounds of imitating your child's actions, elaborate or vary the activity by now showing your child something new to do with the object. For example, your train can crash into your child's or fall off the track. You might need to repeat your action a couple of times and make a big display to help your child appreciate the fun factor. Then pause, wait, and (if needed) help your child imitate the action—he crashes his train into yours or knocks a train off the track. Go back then to the original action your child was doing with the object if this is needed to maintain interest and attention, and after a few rounds, model the new action again and help your child imitate it. Follow this formula of imitating your child's preferred action, then showing your

Helpful Tips

- What if your child wants your toy? No problem: Hand it over and pick up another, or trade yours for his.
- What if your child is so focused on her own toys that she does not pay attention to your toy? You can try spending more time precisely imitating what your child is doing. Most kids, over time, will be interested in the fact that you are copying them and will start to notice what you are doing with your toy. Give your child more time to learn about the mutual imitation game. You can also put your own toys away and take turns using your child's object to imitate each other back and forth. So, for example, you would take the object from your child, briefly imitate her, and then give it back for your child to do. In your own turns, alternate between two or three rounds of imitating your child's action (to keep it fun and motivating) and modeling a new action for your child to imitate with your help, if needed.
- Be aware of how many turns you take (keep them balanced with your child's), as well as the length of your turn (short)! If your child likes the effects you are creating, then you have more leeway to take more frequent turns. If not, keep your turns short, keep the turns balanced, and be sure to imitate what your child does often, to keep the child engaged in the activity.

new action (and it can be different things—crashing, rolling, circling the train), and helping your child quickly imitate it.

"This type of activity worked really well for us. My son loved seeing new, fun things to do with his cars (like racing them fast up the sides of furniture or crashing them down again). Because he thought the activities were fun, he was very interested in copying them."

- Expand beyond playtimes. Imitation with objects is an activity that can occur any time your child is holding an object. There are lots of opportunities for imitating your child at mealtimes (taking bites with spoon, using hands, drinking from a cup, banging a spoon on a tray, etc.). Children are also often vocal at mealtimes, so there should be opportunities to imitate your child's sounds as well. Bath time offers lots of opportunities too—activities with bath toys, as well as activities with water (splashing, pouring, bubbles, washcloths). Toddler books that elicit actions (holes to poke in, doors to open, etc.) can also be used.

Helpful Tip

Read toddler books in simple language—label actions and objects. Don't try to read whole sentences to children who don't yet speak. They will get more from the book if you label what they are looking at and doing.

Summary of Step 2

If you have followed along and carried out the preceding activities, you will have found ways to use toys and household objects to imitate your child and to begin teaching your child how to imitate your actions with objects. See if you agree with most of the statements in the following checklist. If so, you are now armed with important skills for teaching imitation of new actions to your child—knowledge you will use in **Step 3**. If not, start experimenting during play and caregiving routines until you have found some methods that work for each statement.

Activity Checklist: Imitating Actions with Objects

____ There are double sets of toys or multiple objects that I can use with my child.
____ I frequently imitate my child's actions with objects.
____ I sometimes model variations on my child's actions as well as different actions in play, and prompt my child to imitate my actions on objects.
____ My child and I can trade an object back and forth when we are taking turns with it.
____ I am aware of my child's attention to my actions, and can "feel" when I can take longer turns and when I need to keep my turns very short.
____ I have found opportunities to imitate my child across most of our daily activities; it feels almost automatic now to do so.

What about Claire? *Claire's dad has continued to make animals out of play dough to work on Claire's vocal imitation skills. Her favorite animals to make are a dog, cat, and cow, and she will now attempt to imitate sounds back. Claire's dad would like to help her learn to use objects during the play dough routines instead of just watching him, so he sets out a few different utensils (pizza cutter, rolling pin, and fork) next to the dough and cookie cutters. He knows that Claire will be more likely to imitate new actions if they are part of her favorite game—watching Dad make animals. He makes an animal, and when Claire shows that she is ready for the next*

one, Dad takes out the rolling pin and smooths out the dough. Then he takes the cow-shaped cookie cutter and hands it to her, helps her make the cow, and then makes the animal noise she loves. He rolls out the dough again and offers her the cat. She takes it and moves it to the dough. He quickly gives her hand a little push so the cutter goes in, and then he pulls out the cat and makes that noise. They continue with the game, with Claire now putting the cutters onto the dough when he gives her one. In the next few days he will help her add the rolling pin step to the routine.

What about Malik? *Remember Malik? He's the little boy who tends to mouth objects rather than playing with them, and his mom has been practicing mouth games to encourage sounds from Malik. So far, Mom has found that the games help Malik make "bbb," "ooo," and "aah" sounds. Even though Malik doesn't play with objects, Mom hates to skip over this step. After Mom thinks about it, she decides that using one toy to take turns with rather than double sets may minimize Malik's mouthing on objects and possibly help him learn how to imitate actions. Mom considers different toys to use and decides that if a toy does something when pushed or pulled, it might captivate Malik enough not to want to chew on it. She takes out a rocket toy; when she pushes its button, a circle spins from its top and lands on the floor.*

Mom sets the rocket on the floor between her and Malik. She tells him, "Watch this. Push." Meanwhile the circle shoots straight up and lands a few feet from Malik. Mom says, "Let's get it," and takes him by the hand to pick up the circle and set it on top of the rocket. Again Mom says, "Watch this. Push," and sets the circle off into the air. This time Mom points to where the circle landed and tells Malik, "You get it." Malik looks at the circle but doesn't get up immediately. Instead of getting up herself, Mom waits and encourages Malik to pick up the circle by pointing toward the circle and saying again, "You get it." This time Malik gets the circle but doesn't take it over to Mom. However, he doesn't put it in his mouth either, so this is an improvement. Mom moves the rocket closer to Malik and says, "Put on," referring to the circle. She then helps Malik with the action and next tells him, "Push," as she helps him launch the circle. After it lands, Malik runs over to get the circle and brings it back to put on the rocket. Mom helps him, and together they push the button.

They now have a turn-taking game with an object, and Mom never thought this would be possible. She's realized that using a toy that the two of them can take turns with and share may be the best strategy for building up his play repertoire, at least until he develops more skills. Mom is so excited about this development that she adds one new action to the game. She holds the circle up to her eye and says, "Boo, I see you," and then tickles Malik. He likes to be tickled and enjoys the variation to the game. Mom peeks through the circle the next time it lands on the floor and tickles him again. Then she helps Malik hold the circle up to his eye and says, "You see Mommy." Malik doesn't imitate this action yet by himself, but he stays involved with the activity and likes the action that follows—being tickled—so Mom decides to make tickling another action he can imitate back. Now they have multiple actions within a game with an object that Mom and Malik can do together.

Step 3. Imitating Hand Gestures and Body/Facial Movements

Rationale. At this point you have developed interactive games for teaching your child to imitate sounds and actions with objects during various activities. The next step is to teach your child how to attend to and imitate the hand gestures and physical motions that are part of your songs and sensory social games. Remember that in Chapter 6 we talked about how to build fun little social routines with special actions and words (peekaboo, "so big") or songs with finger plays or other kinds of movements ("Itsy-Bitsy Spider," "London Bridge," "If You're Happy and You Know It"). Now it's time to teach your child how to imitate some of the different gestures, body movements, and physical actions that you've been doing naturally during these routines. Practice the strategies presented next during familiar and pleasurable sensory social routines, to teach your child to associate some of the words and rhythms of the songs and games with the important movements that are part of the game. For instance, "The Wheels on the Bus" is associated with the movement of twirling your arms; peekaboo is associated with hiding your face behind your hands and then opening them when you say "Boo!"; and so on.

Activity: *Teach Imitation during Finger Plays and Songs with Actions*

Remember that up until now you and your child have been participating in face-to-face social games in which you start a physical game (tickle) or sing a song ("Slippery Fish") and gradually pause in midverse or before performing the action, waiting expectantly for your child to signal you to continue the game (saying "tickle" or looking up at you). You have been doing this for a while now, so it's likely that your child now easily communicates to tell you to continue or "do it again" with eyes, gestures, expressions, or sounds. Once your child is easily and frequently communicating this goal, you can begin to focus on teaching your child to imitate one of the key movements used in the song or game.

Here is the sequence for teaching your child to imitate gestures/movements:

- Pick a favorite, well-practiced song or game, and then pick a movement that is very easy to do (hands up, hands together, clap hands, etc.) from a routine that your child really enjoys!
- Teach your child to imitate this gesture by starting the song; then, when it is time for the gesture in the song, begin the gesture and then stop and help (prompt) your child to make the gesture. ***Prompting*** means giving your child some help in order to bring about the action you want him to perform. The prompt could be a gentle touch on the body part you want your child to use (touching the elbow to prompt raising hands in the air),

or, if needed, physically guiding your child's body through the action (taking his hands and bringing them up in the air). Over time, the goal is to reduce the prompt gradually. For example, if you have been guiding your child's hands through the movement, you would start to fade the amount of guidance until you are only briefly touching his elbows to encourage him to raise his hands in the air or pointing toward his arms. Eventually, you want to remove the prompt altogether so your child will do it all by himself in imitation of you.

- Once your child has imitated the action with your help, continue the routine so that your child experiences the pleasure of the routine as the "reward" for imitating the movement.

Helpful Tip

Be careful not just to move the child's body through the motions day after day. This does not teach imitation. You teach imitation by demonstrating the movement first, and then waiting for and encouraging your child to imitate you. If your child does not produce some version of the gesture, then physically help your child to do it. But give as little help as possible to get some version of the gesture, and give less and less help over time. This is called ***prompt fading***, and it is really important to your child's learning to make the movement on his own. Making a sloppy imitation all by himself is *much* better for your child than making a perfect imitation because you have helped him.

- Try not to manipulate the child's hands after the first few prompts. Rather, prompt her from the wrist, arm, elbow, or shoulder, so your child does not think that what is expected is to give you her hands for you to move.
- Always continue the song after the child has made the gesture, either with or without help. That is the ***reinforcer***, or reward.
- Teach only one gesture at a time. For instance, if you are teaching "Itsy-Bitsy Spider," you might teach the "spider" gesture by having your child bring the fingers of both hands together several times. You would have your child imitate this gesture each time you use it. But you won't start teaching your child a second gesture ("Down came the rain") until he can produce the "spider" on his own. You will still sing the song and use all the gestures yourself every time, but you will teach your child one gesture at a time until your child produces some version of it independently, often, and easily.

- Don't be a perfectionist. The sooner your child makes some gesture independently, the better. Don't be concerned if the gestures are partial, "sloppy," or rough approximations at first. In the same way that you have encouraged your child to imitate vocalizations by responding to any sound, you want to encourage your child to imitate gestures by positively responding to any movement with the right body part first (e.g., slightly wiggling fingers when you make the spider gesture). The gestures can get more exact later.
- Some gestures are used frequently in a lot of songs. For instance, hand claps figure in pattycake, "Open, Shut Them," and "If You're Happy and You Know It." Once your child is beginning to imitate clapping hands in one of the songs, prompt her to do it in the other songs that use it, too. The more imitation practice and use your child engages in, the better.

Here are some additional activities for developing gesture imitation:

- Add facial expressions (smiles, pouts, fake crying, surprised faces) to your sensory social routines. Exaggerate emotions to cue your child to pay attention to your face, and encourage your child to imitate you. Obviously, you can't physically help your child make a smile or frown, but you can give the expression meaning with your language and actions. You can touch your child's face as a prompt, however.
- For facial imitations, you will need to use exaggerated and somewhat slowed-down movements. For instance, with a balloon or bubbles, get close to your child—on the floor, face to face. Puff your cheeks up really big, and blow slowly and dramatically. This dramatic setup of the game tells your child what is coming and helps your child notice and read your nonverbal communications. However, it also puts your facial actions into your child's spotlight of attention. As your child comes to know the meaning of the action, pause while making it, model the action for your child, and wait to see if your child will imitate it to request the action. Again, at first, you don't expect exact imitations. If your child slightly opens his mouth when he sees you making the blowing gesture, that's terrific!

  Two-year-old Amber loves the balloon game. Her mom begins to blow up a balloon, slowly and dramatically, and then takes her mouth off the balloon, looks at Amber, and makes the blowing gesture with big cheeks. She pauses, waiting expectantly to see if Amber will imitate the gesture. Whether Amber imitates or not, Mom says, "Blow balloon," puffs her cheeks dramatically, makes some blowing sound effects, and blows it again and lets it fly for Amber to chase. In a few days, Amber comes to expect the puffed cheeks and imitates the gesture

(approximately) during the expectant waiting pause. In a few more days, she is also saying an approximate version of "Blow."

- Playing face imitation games in front of a big mirror often helps your child learn facial imitations like blowing, raspberries, making a popping sound with your lips, kissy faces, and the like and becomes a very fun activity.

Here are some ideas for using other daily activities to develop face and voice routines:

- During diaper changing—when your child is lying in front of you, focused on your face—is a great time to develop silly face and voice routines, like animal faces and calls, alphabet song or number songs, tongue wiggles, and raspberries. Put a kazoo on the changing table, and use it to make silly noises while you change the diaper. This is also a time to buzz a belly, play creepy fingers or peekaboo, and so forth.
- Dressing also allows for peekaboo with shirts; sound effects for "stinky shoes, stinky socks, stinky feet" routines; buzzing bellies; "This Little Piggy"; and so on.
- Mealtimes also offer times for big face and voice effects—"yum" faces and sounds for delicious foods; "yucky" faces and sounds for food your child rejects; drinking sounds and gestures; eating sounds and gestures; licking something good off a finger; using your tongue on an ice cream or a peanut-buttered carrot. If your child is in a high chair and you are sitting pretty much in front of her, you are in the best possible position for drawing your child's attention to your face and voice.
- Label and react big-time to unexpected events that happen during the day. Use a big "uh-oh" and a startled expression when something falls. Use "oh, no" and a big expression when you build a tower and it falls. Use a big "crash" when cars crash. When your child gets hurt, say, "Owie, you got an owie," with a big expression as you examine the owie and give comfort. Then put a big, noisy kiss on the owie with a big display of "all better."
- **Caution!** Imitating facial movements and sounds is a lot harder for young children with autism than imitating actions on objects is. You are likely to see your child imitate your actions on objects before she imitates body and facial movements or songs. Don't worry about this—it's the usual way that imitation develops in most young children with ASD. Just keep the various sensory social routines up, adding new ones each week, keeping up the old ones, and sooner or later your child will start to imitate some actions or sounds in them. Don't forget to expect that your child will imitate these someday. Continue to wait, help your child imitate, and then continue the fun game.

Summary of Step 3

If you have followed along and carried out the preceding activities, you will have found gestures, body movements, and maybe some facial expressions that you are helping your child to imitate during sensory social routines and daily activities. See if you agree with most of the statements in the following checklist. If so, you are now armed with important skills for varying imitation inside toy and social games—knowledge you will use in **Step 4**. If not, start experimenting during play and caregiving routines until you have found some methods that work for each statement.

Activity Checklist: Am I Helping My Child Imitate Gestures, Body Movements, and Facial Expressions?

____ I have found sensory social routines and songs that make my child smile.
____ My child easily signals me during his or her turn to continue sensory social and song routines.
____ I know at least one gesture or body movement in each sensory social and song routine that I can teach my child to imitate.
____ I know how to add facial expressions and sound effects to sensory social and song routines and daily routines for my child to observe.
____ I know how to pause and wait for my child to imitate the action without my help.
____ I know when to physically help (or prompt) my child to imitate the action.

What about Malik? *Mom has a few songs she sings to Malik ("Twinkle, Twinkle, Little Star" and "Open, Shut Them") every day during dressing, diapering, and bath time. Mom begins singing "Twinkle, Twinkle, Little Star" while opening and closing her fingers during each verse. She decides that this might be a relatively easy gesture for Malik to learn how to imitate. After singing the song in its entirety one time through, she starts the song again and pauses at the end of the first line with her hands open and out in front of her. Mom waits to see if Malik will move his hands in some tendency to imitate hers (lift up his hands, reach his hands toward Mom's, open and/or close his hands, etc.). He doesn't do any of these movements, but continues to look at her with great interest. Mom takes her hands and pats her palms against his palms several times. Then she continues the song. When she gets to the end of the song, where the words "Twinkle, twinkle, little star" are repeated, she again lifts her open hands in front of him and waits for him to pat hers. When*

he does not, she opens his palms and pats them with hers. For the next few days she does this repeatedly, and within a few days Malik reaches his palms to hers when she puts her hands in front of him. Mom is thrilled and pats his palms a couple of times as she sings the line. Over the next few days, he not only reaches to her palm, but also starts to pat. She's ecstatic that he's trying on his own to imitate a new gesture, even if it's not perfect. He is really learning!

Step 4. Imitating and Expanding on Actions

Rationale. Developing variations in the imitative turn-taking games keeps the games interesting and less repetitious for longer periods of time. It supports your child's longer periods of attention to you. It also teaches your child to use objects in a variety of ways. This expands the number of things your child can do with objects, and replaces repetitive play with flexible and more complex play with toys and social games. Each time your child imitates a new action, it makes future imitation easier and easier for your child and more automatic.

Activity: *Add Variations*

Once your child easily and consistently imitates a familiar action that you model, you can start expanding the actions so that the initial action or theme doesn't become boring or repetitive after a few turns for you or your child. Adding a variation often makes the imitation fun and surprising for your child. How will this look? Your first imitative action back and forth two or three times in the play establishes the theme, the main action. After this, you will introduce something new into the imitation—a variation—to keep it interesting and keep the turn going longer. In doing so, you will also teach a different action imitation, making the routine a little more advanced.

Here are some ideas for introducing variations:

- Earlier we talked about copying your child's use of an object to create a turn-taking imitation game. Once your child does this easily—copies you copying him—show your child a new, easy, and very interesting action to perform with the object. It might be showing your child how to stomp bubbles you've just blown, how to hit an inflated balloon up into the air, how to turn around while playing "Hokey-pokey," or how to crash a car into a tower of blocks after building them. You model it first, then hand over the object to your child so he can imitate you. If your child doesn't begin to imitate, then prompt him to imitate you, show enthusiasm for your child's success, and then let your child play with the object any way he wants to for a minute. Then repeat the whole sequence: modeling Action 1; giving your child the materials to imitate; then taking your turn and

modeling Action 2; then giving your child the chance to do Action 2; and cheering or clapping and letting your child have the toy. The reinforcer for your child's imitation is to have the desired object for a bit without any demands. Of course, your happy cheers are also a big reward.

- Variations are often more interesting to your child if they involve simple, but unusual and interesting, actions on objects: sticking a stick into a play dough ball, tapping a shaker with a stick, or putting a ball in the bottom hole of a maze instead of the top. You will teach your child to imitate these new actions in exactly the same way we have discussed before: showing your child while labeling your act, waiting expectantly, prompting if needed, cheering your child for trying to imitate, or helping your child imitate if she doesn't try and then cheering. Excellent materials for working on theme and variations include play dough, art activities, musical toys, and complex arrays of things (train tracks and cars; sets of blocks; building sets, and pretend play props like glasses, hats, necklaces, bracelets, brush/comb, etc.).
- Theme-and-variation imitative play is a great way to introduce new toys or objects for which the child has no set ways of playing, so that everything you model will be new. Materials that don't work well for teaching new object imitations are those that the child has a very set and repetitive way of handling.

Summary of Step 4

If you have followed along and carried out the preceding activities, you will have developed all of the stages or steps in how to teach different kinds of imitation (verbal, actions with objects, gestures, body movements, facial expressions) to your child in toy play and sensory social routines. You know how to take turns with your child and develop an initial theme for imitating one action, and after several rounds you know how to vary or expand the activity to include other types of imitation that your child can do. If so, you are now armed with important skills for taking turns and teaching during joint activities. If not, start experimenting during play and caregiving routines until you have found some methods that work for each statement.

Activity Checklist: Am I Expanding My Child's Imitation?

____ I know how to develop a theme during imitation with my child during toy play and sensory social routines.

____ My child can easily imitate at least one kind of action without my help during toy play and sensory social routines.

____ I know how to vary or expand the joint activity to teach other kinds of imitation to my child during toy play and sensory social routines.
____ I know how to create interesting and new spectacles that my child will imitate during toy play and sensory social routines.
____ My child thinks these variations are fun and attempts to imitate actions back.

Step 5. Putting Imitation Games into the Joint Activity Frame

In Chapter 6 we discussed at length the four parts of a joint activity routine: setup, theme, variation, and closing/transition. You can probably see now how well imitation games fit into this framework. You may even have been using this four-part framework already, either intentionally or automatically, as you have been focusing on imitation activities and variations within them.

The play frame that we have been talking about all through this chapter on teaching imitation is the joint activity frame, with a beginning (materials come out), a theme (the first action is imitated), and one or more variations. We have not discussed closings/transitions yet, but ideally the closing is an organized ending, as you have practiced in Chapter 6. In the rest of this book, we continue to suggest ways for you to use the joint activity framework and imitation strategies to teach other kinds of developmental skills to your child. Imitation and turn taking during object-focused joint activities and sensory social routines, as well as during various caregiving routines, are fundamental processes by which young children learn from others about language, social behavior, and how objects work. If you learn the concepts we have introduced so far, you will already have the most important teaching skills you can have for helping your child move ahead, even if you go no farther than this chapter.

Activity Checklist: Am I Putting Imitation into the Joint Activity Frame?

____ My imitation activities typically involve a setup period, in which my child and I identify a theme of the activity.
____ We take a few turns sharing the theme by imitating each other in turn or playing it in unison.
____ After a few repetitions, either my child or I typically vary or expand the theme to include additional actions to imitate.
____ When my child's attention is beginning to wane, or when the routine feels too repetitive, we typically do an organized closing/

transition—putting things away, making a clear transition together, or making another choice.

____ I am using the four-part structure of joint activities at least sometimes during meal, dressing/changing/bathing/bedtime, and I see my child beginning to anticipate the steps in more of these routines.

What about Claire? *Claire and her grandma have developed several toy games and sensory social routines that include different acts of imitation. One of Claire's favorite activities is when Grandma imitates her rolling a toy car back and forth on the coffee table. Grandma takes a second car, faces Claire from the other side of the table, and imitates the rolling, saying "zoom, zoom, zoom" as she rolls. Then she pauses. Rolling is the theme of the imitation game, which Claire has set. Claire stops and looks up during Grandma's pause, and Grandma takes that as a cue and rolls again, which Claire imitates with her own car. Grandma repeats this whole round again. But Grandma can tell that Claire is losing interest in this game, because she's not responding or participating as energetically as before. Also, this is a skill that Claire performs easily. So Grandma makes a variation. She puts a long wooden block on the coffee table, with one end of it on a stack of books, and she sets her car on the high end and lets it roll down. Claire watches this with great interest and then rolls her car on the table again. Grandma gets her attention, rolls her car down the hill again, pauses, and then prompts Claire to do the same by helping her place her car on top of the block. Claire's car rolls down, and Grandma cheers. Grandma rolls her car again and then starts to help Claire, but Claire now does it herself, and Grandma cheers again. This is now appealing to Claire, who shifts her focus to this new game, and the two imitate each other for a few more rounds on the hill.*

Grandma realizes that she and Claire have built theme and variation in their imitation game. She also notes the number of imitations, including new acts, that Claire is now making; the length of Claire's attention to the play routine; and the number of practice turns (learning opportunities) that Claire experiences. This strategy has allowed Claire's grandmother to do more teaching in the play than she could have if she had only stayed with the theme. Claire likes the variation described above and has learned to imitate it after a few experiences with it, which Grandma realizes may be necessary to show a new idea and have it become interesting to Claire. If Claire doesn't like a variation after a few examples, Grandma can go back to the rolling game for a turn or two and then try a different variation—like crashing the cars or rolling them off the coffee table. Grandma understands that the overall goal is to extend the length of the joint activity routine, to have as many back-and-forth imitative exchanges as possible, and to weave in opportunities for varied imitation. Once the cars begin to lose Claire's interest, or if the game loses its social nature or

becomes overly repetitive, Grandma is ready to suggest "all done" and model putting her car in the car box, gesturing for Claire to do the same—a nice ending to this well-done joint activity routine!

Chapter Summary

This chapter has focused on ways to help your child increase his or her imitation of you and others. We began by discussing the importance of your imitating your child—his or her actions and sounds. We then discussed several different types of imitations: imitation of actions on objects (the easiest for most children with ASD), imitation of sounds, imitation of varied actions, and imitation of gestures and facial movements (the hardest for many children with ASD). If you have followed along, you have increased the imitative opportunities your child has throughout the day. We then discussed the importance of adding variations to imitations to keep them from getting too repetitive. We pointed out how well imitation routines fit inside the four-part structure for joint activity routines: setup, theme, variations, and closing/transition. And, finally, we mentioned how imitative joint activity routines can fit into all your child care routines—not just toy or other object play and sensory social routines (including songs), but also meals, different types of caregiving, book routines, and household chores. Each imitation is a learning opportunity, and by embedding these kinds of games throughout all your activities with your child, you can dramatically increase the number of learning opportunities your child has.

Refrigerator List

Goal: To teach your child how to imitate different actions.

Steps:

- ✓ **Imitate your child's play with objects and expect your child to imitate back.**
- ✓ **Imitate your child's vocalizations and sounds and expect your child to imitate back.**
- ✓ **Use prompts to encourage imitation, but fade them fast!**
- ✓ **Don't expect perfection; accept your child's approximations.**
- ✓ **Make your imitative games turn-taking games—mini-conversations.**
- ✓ **Use the four-step joint activity structure to vary the imitations.**
- ✓ **Use songs and sensory social routines to build gesture imitations.**
- ✓ **Stay in your child's spotlight.**

9

Let's Get Technical

How Children Learn

Chapter goal: To explain the basic principles and underlying strategies for helping your child engage, communicate, and learn, so you can apply these in new ways to boost your child's learning.

Chapters 4–8 have provided the building blocks that form the foundation for your child's learning. If you have followed along and practiced these strategies, you have already accomplished a lot and have likely seen a noticeable increase in your child's ability to engage, communicate, and learn. Good for you! Now we want to provide some background on how kids learn, so you can use these underlying principles flexibly in new situations as your child moves forward and meets new learning challenges.

With an understanding of ***a***ntecedents (events that immediately precede a behavior), ***b***ehaviors (your child's goal-directed actions), and ***c***onsequences—the ***ABC's of learning***—you can motivate and teach new and even more sophisticated behaviors you want your child to learn, from pretending to starting to speak. These principles are based on the science of ***applied behavior analysis (ABA)***. In Chapter 1 we have explained that ABA is the application of the science of learning to help people learn new behaviors or change existing ones, including. reducing the frequency of problem behaviors. We use these principles—the ABC's of learning—throughout the chapters of the book.

Why Applied Behavior Analysis Is So Important

We have defined what ABA is, but you may not know that it isn't one specific intervention approach. This is a common misunderstanding. ABA is *applying*

the science of learning to understanding and changing specific behaviors, and it underlies many different early intervention approaches for children. Discrete Trial Training, Pivotal Response Teaching, the Early Start Denver Model, Reciprocal Imitation Training, Milieu Teaching, and Incidental Teaching all use the principles of ABA.

You've been using them too! If you've been following the chapters up to this point and trying the strategies from each one with your child, you have taught your child a number of skills. In other words, you've encouraged new skill learning in your child by making it worthwhile for your child to learn what you're teaching. Because we've found it so helpful for parents to learn new habits of interacting with their children, we've been walking you through the use of these without using the technical terms of ABA, to help you get started. But the truth is that even your own behavior has been shaped by the principles of learning! You've been following the "rules" of learning new behaviors too; you've been trying new strategies, and the rewarding consequence of your applying these strategies has been experiencing the delight of seeing your child learn from you, right before your eyes. Pretty motivating, isn't it?

Now is a good time to understand the "rules" of learning in a more technical way, because this is likely to help you become more aware of many things:

1. Your own behavior
2. The meaning and goals that underlie your child's behaviors
3. How various situations lead to, or cue, your child's behaviors
4. How various events that follow your child's behavior reward your child for behaving in certain ways

Once you understand how the ABC's of learning work to build and maintain your child's current set of behaviors, you will have the tools you need to (1) teach your child new ways of behaving that are more age-appropriate or more acceptable (encouraging desirable behaviors and discouraging undesirable ones); (2) increase the number of learning opportunities for your child that are potentially present in every daily activity; and (3) help your child take full advantage of these learning opportunities you are providing.

What's Happening in Autism?

Children with autism respond to the ABC's of learning just like everyone else, but three aspects of autism demand a much more explicit focus on their learning than we need for other children:

1. **Children with ASD are not as interested as other children in pleasing other people.** Most children appear quite aware of their parents' pleasure, or displeasure, in response to what they say and do. Thus their parents' approval or

disapproval naturally serves to shape children's behavior, since children are motivated to gain parental attention and approval. Children with autism, however, are usually not so aware of or affected by the subtle (or even not so subtle) social consequences of their behavior, and therefore aren't as likely to do what adults want them to do just to please them.

2. **Children with autism are less interested than other children in sharing their experiences with others.** Most small children share with others by making eye contact, smiling, giving or showing objects, and pointing out interesting objects to their parents. For example, by the age of 12–18 months, most children will start pointing to things they find interesting, labeling them, and then looking toward their parents to share or show what they are noticing. They want their parents' attention and response. However, these child behaviors—***joint attention behaviors***—are quite infrequent in young children with ASD. And without these tools in their repertoire, they miss out on an enormous amount of language learning, social learning, and interpersonal connectedness. This is why you've been developing ways to promote what is known as ***shared attention***, or ***joint attention***, with your child in many of the strategies you've already learned. We focus very specifically on teaching joint attention in Chapter 10.

3. **Children with autism imitate others less than other children their age**

"My son was less interested than others in being independent but became more and more interested in being like his sister or like friends as he saw them doing appealing things. I first noticed this when his sister was hopping around pretending to be a frog. He realized that she was having a great deal of fun and started hopping with her, even though he may not have understood the pretend play aspect at the time (he does now, at age 3½). Having his sister or other role models demonstrate fun activities, I think, has helped his overall ability to care about and model his behavior after that of peers. He is still less motivated than other children to do things that don't seem as obviously fun, such as washing his hands, but I think even that motivation is improving as he understands that he can learn from them. He is doing more and more things that are expected behaviors rather than just fun behaviors (he has been able to start a taekwondo class recently, due to his improved ability to model others and show appropriate behavior in a class!). Many of the activities mentioned in previous chapters can be used by other children (especially when the children are slightly older) to encourage cooperative play and imitation."

do. Other children seem to have an internal goal of being like others, and to find their own personal pleasure in doing what others do and doing so independently. A child without ASD wants to handle a spoon alone, put on her own socks and shoes, do what her big brother or sister can do. We've heard many parents of children with autism say, "I think he would happily have me dress [or feed, diaper, etc.] him forever; he doesn't seem to have any desire to be independent or to do things for himself." Children with autism may imitate another person to make a toy work or to get to the cookie they want—in other words, to achieve a goal—but usually not just to "be like" another. Without that powerful goal, a child with autism does not practice skills he sees others use, and so he misses out on learning social and adaptive behavior from observing others. That's why we spent so much time on teaching imitation in Chapter 8: to help your child build up motivation to do what others do.

Why Is It a Problem?

Because children with autism are less interested in pleasing others, sharing their experiences with others, and imitating others, they miss out on many ABC learning opportunities that are present in the daily caregiving and play that provide most children with constant learning opportunities. These missed opportunities are reflected in the developmental delays—in language development, gestural development, self-care skills, and social play—that are part of the profile of early autism. Since children with autism have difficulty using existing social interactions as learning opportunities, those around them need to make those opportunities more explicit. That's the good news: It is possible to teach a child with autism to enjoy the praise of others, to enjoy sharing and imitating others! To make this happen in a wider set of circumstances and with a wider set of behaviors, you need to know the basic principles that are operating when learning occurs.

> *When Molly sees big sister Tina get some milk from the refrigerator, she screams and grabs at Tina to get the milk. Dad says to Tina, "Your sister wants some milk. Give it to her and get more for yourself." Tina cooperatively hands Molly the glass of milk and gets another. What has happened here? Molly's behaviors involve screaming and grabbing (occurring in response to the antecedent of seeing another person with some milk) and have resulted in a positive consequence, or* ***reinforcement****: She has achieved her goal and gotten the milk she wanted. Next time Molly sees someone with a glass of milk and she wants it, she will be more likely to scream and grab. A well-meaning father, who cares about his daughter and understands her desires, has inadvertently rewarded her unwanted behavior by having her sister hand over the milk. As you'll see, applying the learning principles described in this chapter can dramatically change the outcome of situations like this.*

What You Can Do to Understand and Teach the ABC's of Learning to Your Child

There are six specific steps you can carry out to increase your understanding of the ABC's of learning and teach your child new skills and appropriate behaviors:

Step 1. Pay attention to what your child *does*: B is for behavior.
Step 2. Choose the reward: C is for consequence.
Step 3. Identify what came first, right before the behavior occurred: A is for antecedent.
Step 4. Put the ABC's of learning together.
Step 5. Use the ABC's to increase your child's learning opportunities and teach your child new skills and behaviors.
Step 6. Change unwanted behaviors.

Step 1. Pay Attention to What Your Child *Does*: B is for behavior

Rationale. All behavior is *lawful*. In other words, all children do the things they do for a reason. Behind every single action your child (or anyone else) performs is a reason—a goal for that behavior—and no matter how unusual the action is, there is a logic to it, a reason why the person is doing it. This goes for what people say as well as what they do; it also goes for what they don't do. When you see your child doing something that makes no sense to you, stop and ask yourself, "What is her goal?" It will often be clear, and then you will see the purpose, or function, of that puzzling behavior. All behavior is functional—it functions for the person; it generally results in some positive consequence for her. We'll come back to this later in more detail, but for now, consider the following rules to help you understand the reasons or goals behind your child's behavior.

➔ *Rule 1.* We focus on what children *do*—their behavior—not on what they "know." We do not measure our success at teaching in terms of what children end up knowing, but rather in what they do routinely. Why? Because little children cannot tell us what they know, and because what we want to teach are the behaviors that are difficult because of autism—the way they act toward others, communicate with others, play with objects, and participate in daily activities. It is common for us to ask a question like "Does she use a fork?" about a child and to hear a parent answer, "Yes, she knows how to use it. She prefers to use her hands, but if I make her, she will take a bite with a fork." We'd argue, then, that the correct answer to the question is no, because knowing how to do something is not the same as doing it, and the kinds of skills that young children with autism

need to learn are those that are used all the time, independently, without someone having to make them use them (skills like speech, gesture, sharing, play with others, greeting others, sharing emotions, etc.). So when we focus on what children with autism do, we are talking about observable, consistent behavior. And there are always reasons, goals, or functions that lie underneath their behavior, built up from their previous experiences of the physical or social consequences of the behavior.

➔ *Rule 2*. People do what they do to (a) get something they want, something that pleases them; or (b) avoid something they don't want, something that is unpleasant to them. It seems too simple to be true, but these are the only two primary reasons, goals, or functions for behavior. Your child behaves the way he does because in the past the behavior has worked for him either to obtain something rewarding, or to escape or avoid an experience he didn't like or something that prevented your child from achieving his goals.

Activity: *Observe Your Child's Behavior*

We suggest you find some time over a couple of days to observe some of your child's behaviors and consider the goals or functions behind the behaviors. Try to do a few observations in most of the six types of target activities: toy or other object play, social play, meals, caregiving (bathing/dressing/changing/bedtime), book activities, and household chores. This does not mean that you must sit down with a notebook on the sidelines and observe. It means spending a little time paying attention to your child's behavior and what is happening around your child for 15–20 minutes here and there. Observe and jot down some specific behaviors that your child demonstrates, and also those that you'd like to see more of (e.g., saying "Mama," giving you a smile, or coming to sit in your lap). Also, note the behaviors you don't like, the ones that you would rather see decrease.

Helpful Tip

Remember, a behavior is an observable, intentional action: *yells, cries, grabs, reaches, speaks, looks.* It is not a feeling or state: *frustrated, angry, distressed, in pain*, or *tired.*

Remember the assumption that all intentional behavior is functional and goal-directed. Then ask yourself: What is your child's goal when your child is screaming, looking and smiling at you, or leading you by the hand to the refrigerator? On the next page is a form to use to take some notes so you can develop an eye for looking at your child's behaviors and thinking about the underlying goals. Try to include both positive behaviors and some negative behaviors. The form includes some examples to get you started. Make extra copies of the form if you need more space.

Seeing the Goals in Behavior

Child's behavior	Child's goal
Reached up and looked at me	Wanted to be picked up
Pointed to the dog	Wanted to hear me say "Woof woof"
Said "Help" and put toy in my hands to fix	Wanted the toy to work again
Screamed and clutched toy when sister approached	Wanted to hold on to toy and not lose it to sister
Cried and looked at cupboard	Wanted a cookie from the cupboard

Summary of Step 1

If you have followed along and carried out the preceding activities, you now know how to "see" the goals that underlie your child's behaviors. This step begins the process of understanding the function of your child's behavior, situation by situation. The next steps will address how to "see" the antecedents and consequences that cue and reinforce your child's behavior in each of these situations, but for now, see if you agree with most of the statements in the following checklist. If so, you are now armed with important skills for understanding the relationships between goals and behavior—knowledge you will use in **Step 2**. If not, review this section, spend more time observing, and discuss your observations with a supportive other. Stay with this until you can easily see the goal underlying your child's behavior in a variety of situations.

Activity Checklist: Am I Effectively Observing My Child's Behaviors?

____ I have spent some time observing my child and have made a list of my child's behaviors.
____ I understand the difference between an observable behavior and an interpretation of a state (e.g., whining = behavior, tired = state).
____ All the behaviors on my list are observable behaviors, not states.
____ I understand the goals underlying some of my child's requesting behavior.
____ I understand the goals underlying some of my child's undesirable behaviors.
____ I have observed some behaviors in most of the six types of target activities.

Step 2. Choose the Reward: C is for Consequence

Rationale. ***Consequences*** are environmental responses to a child's behavior. They influence whether a child is likely to use the same behavior again to achieve a particular goal. Look at the examples in the form on page 203. For the first example, the child is approaching with upraised arms and face. The child's goal is a pickup. If the parent responds with a pickup, the child's goal has been met. A positive consequence (***reward***, or reinforcement) has resulted. His behavior has been successful at getting him to his goal. The reward (being picked up) that is obtained as a result of the raised arm gesture increases the chance (reinforced) that the child will use this gesture again to be picked up. A learning opportunity

has occurred. A desired behavior (B)—a clear gesture, in this case—has been followed by a positive consequence (C). In other words, the behavior has been rewarded, or reinforced, by the pickup, the delivery of the child's goal. When we use the term ***learning opportunity*** in this book, this is what we mean: an occurrence in which you have helped your child produce a desired behavior or skill, and you have made sure that this is followed by a rewarding consequence—usually the goal your child has been seeking.

There are also environmental consequences for unwanted behavior. Rushing to your child and providing comfort and attention when she screams is a typical parental reaction. However, if your child's goal in screaming is to get your attention, then meeting your child's goal by delivering the positive consequence of getting attention rewards, or reinforces, your child's screaming. It gives your child the message that screaming is a powerful way to get your attention. Your child will be more likely to scream for your attention next time she wants it, because it has been successful this time. Taking a look at the consequences that follow your child's behaviors is the second step toward understanding why your child does what she does.

Whether behaviors are ones we appreciate (playing nicely, using language) or ones we don't appreciate (yelling, whining, repetitive behavior, screaming, running away, throwing things on the floor, hitting), behaviors are maintained by reinforcing consequences. The technical term for a consequence that increases the chances that the behavior will occur again is ***reinforcement***. As in the preceding example of screaming to get attention, sometimes consequences that we think of as "negative" can act as reinforcement. But responding to a screaming child is actually ***positive reinforcement***, if the child has attained her goal.

Now let's look at another situation. We'll continue to focus on screaming. In this situation, the parents of 4-year-old Jordan, the screamer just described, are trying to brush her teeth. They come to her with the toothbrush in hand. She screams the minute they touch her and puts up a huge fight when they try to get the toothbrush into her mouth. They cannot brush her teeth, and her parents give up in dismay. What has happened here? Jordan's goal is to escape from toothbrushing. Her screams and fighting are rewarded by her escape. Remember from our earlier discussion that that there are basically two functions for behavior—achieving something desirable and avoiding something undesirable. This is an example of escape as a reward. The technical name for this is ***negative reinforcement***. The consequence is still reinforcing—Jordan has achieved her goal—but it is through the *removal of an aversive stimulus*; hence the term "negative." The earlier example, when Jordan achieves her parents' attention through screaming, is an example of "positive" reinforcement: She has attained a desired consequence. Both attaining something pleasant and avoiding something unpleasant reinforce, or strengthen, the behavior your child uses to try to achieve her goals. Here's an important rule to consider when you are observing what consequences follow your child's behavior:

➔ *Rule 3*. Learning new behaviors occurs in response to their consequences. You have been using this rule to teach your child in each of the earlier chapters in Part II of this book. Every time you have given your child a choice and he chooses something, your child has told you what his goal is: to have that thing. When you were teaching your child to extend his arms to request being picked up, you first saw that your child had that goal in mind, because he approached you and indicated in some way that that was what he wanted. Then you extended your arms and got your child to extend his arms (the new skill you were teaching). After he raised his arms (the new skill), you picked him up. In doing so, you made sure he attained his goal. Your pickup was (and is) his reward, the reinforcement, for the new behavior, extending his arms. And it is a reinforcement because he wants it—it's his goal.

Activity: *What Behaviors Do You Want to Reward?*

Every time you provide a toy, a food, or an activity that your child wants, you are rewarding whatever action your child has done just before you hand it over. If she has cried just before, you are rewarding that. If she has looked at you, you're rewarding that. If he has not looked at you, you're rewarding that. If she has grabbed something, you're rewarding that. You strengthen whatever action, or behavior, you reward. Keeping this idea in mind as you interact with your child will help you be a more effective teacher for your child. Try to make sure that your child experiences positive consequences for desired behaviors. Try to make sure that your child does *not* receive positive consequences for undesirable behaviors.

➔ *Rule 4*. Behaviors that are not reinforced will decrease over time. Removing all the positive consequences, or rewards, of a behavior will weaken it over time (reduce its frequency) through a process called ***extinction***. Extinction occurs once all possible benefits of a behavior are eliminated.

What about Molly? *Molly's father decides that he will no longer reward her screaming for her sister's possessions. He instructs Tina to turn her back on Molly and walk away when Molly screams and tries to grab something. Tina appreciates the change; she walks to her room and closes the door if Molly starts to scream. Over the course of the week, Molly stops heading toward Tina for things, and instead begins to go toward her parents and pull at them to get her what she wants. The parents decide that this is a better form of communication and allow her to lead them to the cabinet or fridge. We see that over the week Molly's screaming and grabbing at her sister has been extinguished. The behavior is no longer successful at achieving her goal, and so she gives it up and finds a new behavior that is more functional for her, one that is more successful at helping her reach her goal—dragging her parents to what*

she wants. They follow through by fulfilling her desires, so this new behavior is now being rewarded via the positive consequences that result.

Extinction can also reduce desirable behaviors. Here is a very common example.

Alycia is the mother of Max, who has ASD, and his younger sister, Kerry. Alycia tells Max to ask Kerry for a turn with a toy instead of grabbing it from her. So Max asks Kerry for the flashlight. Kerry ignores his request. So Max is not rewarded for asking. After three tries, Max grabs the toy and takes a turn. His grab is rewarded by getting the toy; his request is ignored. If this continues, he will not continue to request. His requests will quickly be extinguished because they are not successful at helping him attain his goal, and he will continue to grab, because it is successful.

Here is one way this could play out differently:

What about Kerry and Max? *Max asks Kerry for the flashlight. Kerry ignores him. Alycia steps in, guides Kerry's hand and flashlight to Max's hand, and makes sure he gets the flashlight. Max's request has been rewarded. But what about Kerry? She also needs to be rewarded for giving it to him. Fortunately, Alycia has another flashlight right there and offers it to Kerry right away. Kerry takes it and is happy. So Kerry has been rewarded for giving the flashlight in response to Max's open hand and request. Each child has been rewarded for a mature behavior.*

Realistically, it isn't always possible to have another item available (you don't necessarily know in advance that a struggle will develop over a flashlight, a fork, a plate, or a toy), and asking the older sibling to help by giving up the flashlight or other object can lead to a lot of resentment in the older sibling. It is helpful to get "buy-in" from other siblings at home to get their cooperation. Explain what you are doing to help their sibling with ASD learn to communicate and why it is important. That way, if they do give up an object, they feel proud (a reward) and are praised by you (another reward). Alycia could also try giving a different, appealing toy to Kerry (or Max), along with lots of verbal praise and hugs when the requested object is handed over (a positive consequence).

➔ *Rule 5.* There is one other way that consequences change behavior over time: When a consequence (usually a negative consequence) follows a behavior and results in a decrease in frequency of the behavior, it is called ***punishment***. Punishment in this case doesn't mean sitting your child in the corner or something similar. It simply refers to a consequence that is unwanted by the child (or adult) and therefore leads to a reduction of the behavior that has directly preceded the punishment.

"Unfortunately, siblings don't always want to reward nice, polite requests to share. I have encouraged my older daughter to encourage her brother to share, but it can be hard for her to give up toys she values, even when he asks very nicely. I want him to be rewarded in some way for his polite requests, though. We've worked out a system that seems to help. If my daughter has a toy that she absolutely does not want to share under any circumstances, then she is expected to keep it in her room or out of sight of her brother. If she is playing with a toy anywhere else in the house, then she is expected to share. If my son grabs a toy, he can't have it; I take it away so that my daughter is not the one engaging him in a fight (we have a rule that neither child is allowed to grab toys, even if the other one has taken a toy inappropriately). If he asks nicely, then she is expected to let him see it, but she can ask for it back right away (for instance, if she is in the middle of a game and doesn't want to be interrupted). If she asks nicely, then he is expected to cooperate and to return the toy. My son has become very good at sharing even his most valued toys."

What about Kerry and Max? *Let's imagine that after asking nicely to share the toy and being ignored, Max grabs for the toy. Kerry quickly leaves the room with the toy, not allowing Max to have it. Max begins crying and goes to Alycia, who says, "That's what happens when you grab." Max is less likely to grab next time, because his grabbing has resulted in an unpleasant, or negative, consequence—he has lost access to the toy. In technical language, his behavior has been punished.*

Punishment and extinction both result in decreases of behavior over time. Any unwanted consequence is technically punishment. For a child, being told "no" or "not now," having a parent put away an object that the child wants, or having a sibling take something away or push her down when she approaches to

Helpful Tip: Quick Terminology Review

When a behavior is followed by goal achievement, a positive consequence, it is ***reinforced***. When it is routinely not followed by any goal-related event, it is ***extinguished***. When it is followed by an unwanted event that results in goal loss, it is ***punished***.

Extinction and punishment weaken the behavior being used to seek that goal. Reinforcement strengthens it. Children's intentional behaviors are strengthened or weakened by the consequences that follow their responses.

play can all be punishing consequences—unwanted consequences that follow an intentional behavior.

Activity: *Continue to Observe Your Child's Behavior*

For this exercise, take a day or two to find some observation times to pay attention to the consequences of your child's behaviors, considered in terms of your child's goals. Think about whether the consequence of the behavior met your child's goals, and thus was a reinforcer (R); whether it provided an unwanted consequence/punishment (P); or whether it had no consequence at all related to the goal, and thus resulted in extinction (EX). In the form on the facing page, be sure to include some examples of both socially desirable behaviors that your child uses (eye contact, gestures, sounds, or words) and socially undesirable behaviors (e.g., screaming and throwing). For all of these, remember that a reinforcer is the achievement of the child's goals. Sometimes even a behavior that on the surface seems like a negative response to the child's behavior (correction, scolding, etc.) can be a reinforcer if it helps the child achieve her goal (e.g., an older sibling's getting upset might serve as a reinforcer for a younger child who enjoys seeing the sibling upset). Make extra copies of the form if you need more space.

Summary of Step 2

If you have followed along and carried out the preceding activities, you now know how to "see" the consequences that follow and reinforce, punish, or extinguish your child's behaviors. This step continues the process of understanding the function of your child's behavior, situation by situation. The next step will address how to "see" the antecedents that cue your child's behavior in each of these situations, but for now, see if you agree with most of the statements in the following checklist. If so, you are now armed with important skills for understanding the relationships between goals and behavior—knowledge you will use in **Step 3**. If not, review this section, spend more time observing, and discuss your observations with a supportive other. Stay with this until you can easily see the consequences and the type of consequence underlying your child's behaviors in a variety of situations.

Activity Checklist: Am I Identifying Consequences of My Child's Behaviors?

____ I have spent some time observing my child and have made a list of some of my child's behaviors.

____ All the behaviors on my list are observable behaviors, not states.

Did a Behavior's Consequences Meet Your Child's Goals?

Child's behavior	Child's goal	Consequence: R, NR, or EX
Reached up and looked at me	Wanted to be picked up	Picked up my child—R
Pointed to the dog and looked at me	Wanted me to say something	I said, "It's a doggy. Doggy says bow-wow-wow"—R
Said "help" and put toy in my hands to fix	Wanted the toy to run again	I fixed the toy and handed it back to my child—R
Screamed and clutched toy when sister approached	Wanted to hold on to toy and not lose it to sister	Sister left and child was able to keep the toy—R
Led me to door	Wanted to go outside	Said no and did not let him go out—P
Watched brother with a puzzle and vocalized	Wanted to play with the puzzle	Brother ignored—EX

____ I have listed the goals and consequences that follow some of my child's desirable behaviors.
____ I have listed the goals and consequences that follow some of my child's undesirable behaviors.
____ I have been able to classify most of the consequences as reinforcing, extinguishing, or punishing.
____ I have observed some behaviors, goals, and consequences in most of the six types of target activities.

Step 3. Identify What Came First, Right Before the Behavior Occurred: A Is for Antecedent

Rationale. We've been talking about two important principles for learning: (1) The function of a behavior is to gain or avoid certain experiences; and (2) the consequences that follow the behavior strengthen or weaken its use in that situation in the future. Now it is time for the third key principle for understanding and changing behavior: (3) The event that occurs right before the behavior happens is the trigger or cue for the behavior to happen—the ***antecedent***, or stimulus, that cues the behavior.

➔ *Rule 6.* Behaviors occur in response to a stimulus, also called an ***antecedent event***. Antecedents are often observable in your child's environment. Your child sees something he wants (lollipop) or doesn't want (medicine container). He hears a noise (the garage door opening) that means Dad is home. He sees a dog he is afraid of. He walks into Grandma's kitchen and sees the shelf where Grandma always keeps the chips. Antecedents can also be felt: He is hungry. He is tired.

Although we often focus a lot of attention on the consequences of a behavior, we need to focus just as much attention on the antecedents. If we are thinking about a behavior we want a child to develop, we have to think about what environmental event—what stimulus—should cue that new behavior. Then we have to make sure our teaching approach is focused on linking the new behavior to the appropriate cue, or antecedent. That way, we can use the antecedents in various situations to cue the behavior we want to see. We can also remove antecedents to help reduce the chances that an unwanted behavior will occur.

What antecedents do we target? It's easy to focus on verbal instructions. We want children to behave as we tell them to. However, for most of this text, we have been helping you use nonverbal—or gestural—cues as antecedents as well. You have been demonstrating the use of toys (A) so your child would imitate (B), which resulted in an interesting effect (C). You have been pointing (A) so your

child would look at and retrieve something (B) that she wanted or liked (C). You have started a chase game and then stopped (A), so your child would chase you (B) and end up getting caught and thrown up in the air (C). You have started a song your child enjoys and done a finger movement (A1), and a pause (A2) your child imitated (B), and then you continued the song (C). In all these examples, you have used gestures—nonverbal communications—as the antecedents. You are probably quite skilled at this by this point in the book.

Note another important point: Many behaviors we want children to learn are independent skills—skills that other children use without needing an instruction or cue from another. Playing independently, going to the toilet when the need arises, greeting a parent who returns from work, giving a toy to a sister who asks to share—these are a few of many examples in which we expect young children to respond in certain ways without a parental instruction. If you look carefully at each of these complex independent skills, you will see the function, and the reinforcers, in them as well. Children play independently because they enjoy the activity (positive reinforcement). Children use a toilet independently because using the toilet avoids the inconvenient and uncomfortable situation caused by soiling their clothes (negative reinforcement), and also because of the social praise young children receive when they master this complex task (positive reinforcement). Greeting a beloved parent results in an affectionate exchange (a positive reward). Sharing toys avoids conflict (negative reinforcement) and continues pleasant social exchanges (positive reinforcement). These are very well-learned chains of behaviors that children can carry out without instruction, but when they were first learned, there were clear antecedents and direct rewards for each of them. Children with ASD can also learn these complex chains and carry them out independently, as long as there are clear antecedents and reinforcing consequences for them. You are teaching these with every chapter in Part II of this book.

What if you want to teach a new skill but are unsure of the antecedent—the cue—you should use? A good way to figure out what antecedent to use to cue a behavior is to think about what stimulus cues this behavior for most other children your child's age. Whenever possible, we want to use the same antecedents for children with autism that other children use. If you are not sure, observe children at the park, at school, in church, at the grocery store, and in other settings. Or ask friends or family members what their children respond to. Using the same antecedents that other parents use with their children means your child will be able to understand cues that many different people might use. This is why we have been suggesting that you use very typical (though simplified) language and gestures in working with your child. The words and gestures you are using, and the toys, songs, games, and daily routines you have been teaching, are very likely those that other members of your family and your network of friends use as well. Teaching your child these typical antecedents and responses in everyday situations, and with the household objects that occur around you, makes it much easier for your child to learn the antecedent–behavior chains that others will use

as well. Your child is learning what he needs to respond to many people, not just a few, and in many situations, not just the "teaching" environment.

> **What about Max and Kerry?** *The stimulus, or antecedent, for Max's grabbing was the sight of Kerry playing fun games with the flashlight. What is the typical behavior that preschoolers use in response to the antecedent event of seeing another child with a desired toy? Yes, grabbing does occur, but ideally, they ask for a turn. So the mom, Alycia, is correct to prompt Max to ask Kerry for a turn with the flashlight. The typical reward for making the request is getting a turn with the toy.*

The goal here is to teach Max that when he sees Kerry with another toy (A—the antecedent), he should request a turn (B—the behavior), and hopefully be rewarded with a turn (C—consequence). Consider the behaviors and their antecedents in the chart on the facing page. Fill in some you have observed for your own child. Make extra copies of the form if you need more space.

Summary of Step 3

If you have followed along and carried out the preceding activities, you now know how to "see" the antecedents that cue your child's behaviors in many situations. This step continues the process of understanding the ABC's of a variety of your child's behaviors, situation by situation. The next steps will address how to put together all that you have learned to build or change behaviors and skills your child uses to meet her goals. See if you agree with most of the statements in the following checklist. If so, you are now armed with important skills for understanding the relationships between antecedents and behavior—knowledge you will use in **Step 4**. If not, review this section, spend more time observing, and discuss your observations with a supportive other. Stay with this until you can easily see the antecedents preceding your child's behavior in a variety of situations.

Activity Checklist: Am I Identifying Antecedents of My Child's Behaviors?

____ I have spent some time observing my child and have made a list of my child's behaviors.
____ All the behaviors on my list are observable behaviors, not states.
____ I understand the antecedents, goals, and consequences underlying some of my child's desirable behaviors.
____ I understand the antecedents, goals, and consequences underlying some of my child's undesirable behaviors.
____ I have observed some behaviors and their antecedents in most of the six types of target activities.

Understanding the Antecedent to Your Child's Behavior

Child's behavior	What happened before: Antecedent
Reached up and looked at me	Held out my arms to pick up my child
Pointed to the dog	Asked my child, "Where's the dog?"
Said "help" and put toy in my hands to fix	Asked my child, "Do you need help?" and held out my hands to take toy
Screamed and held toy close to chest	Sister was approaching and showing interest in the toy
Led me to kitchen and put my hand on the fridge	Internal feeling of hunger

Step 4. Put the ABC's of Learning Together

Rationale. We have now discussed the basic ABC principles of learning, and if you have tried the preceding exercises, you've thought through your child's behavior the same way behavior analysts do. Step 4 is to put the ABC sequence together. Each child has unique ways of behaving, responding, and interacting with others. By observing your child's behaviors, and the antecedents and consequences of those behaviors, you learn about your child's goals and the functions of his behaviors—why he acts the way he does. Your child's behaviors communicate what consequences or outcomes he has previously experienced, and what cues or antecedents lead to his behaviors. Unwanted behaviors like tantrums and aggression are part of all children's repertoires of behavior, and they become habitual if these behaviors have repeatedly led to goal achievement—to positive consequences. These are not "naughty" behaviors; they are functional behaviors for a child who uses them. They are the child's best efforts to attain his goals. Desirable behaviors, like giving a hug or kiss, occur for the same reason: They result in positive consequences for a child. All of your child's intentional behaviors follow the same rules. They are the most effective means your child has found for achieving his goal in a situation signaled by an environmental cue. Desirable or undesirable, they are functional—they work.

Activity: *Observe Your Child's Socially Desirable and Undesirable Behaviors, Their Antecedents, and Their Consequences*

This exercise will help you see and describe the whole sequence underlying some of your child's habitual behaviors. It is so important to begin to see the ABC sequences that underlie your child's current repertoire of desirable and undesirable behaviors that we encourage you to spend the next few days learning to see them. If you learn this skill well, you will be able to use it effectively throughout your child's life to teach new behaviors, increase desirable behaviors your child already does, and reduce the frequency of your child's unwanted behaviors. These principles work in the elementary school period, during adolescence, and in adulthood. Once you learn to see them, they will start to "pop out" at you, which will give you many more ideas for ways to teach your child new or different responses to situations and experiences. Start by jotting down examples of your child's behaviors (B's) and goals. Those are the keys to defining the antecedents (A's) and consequences (C's). Once you have the B's and goals down, note the consequence and the antecedent, just as you have done earlier. These are probably getting easier and easier to see. Be sure to write down some desirable behaviors that your child demonstrates, and also some undesirable behaviors—things you wish your child did not do.

Summary of Step 4

If you have followed along and carried out the preceding activities, you now know how to "see" the goals, antecedents, and consequences that underlie a number of your child's desirable and undesirable behaviors. This step continues the process of understanding the function of your child's behavior, situation by situation. The next step involves using this knowledge to teach your child new skills and to increase the number of learning opportunities you provide for your child. See if you agree with most of the statements in the following checklist. If so, you are now armed with important skills for understanding the relationships that support your child's various behaviors: goals, antecedents, and consequences—knowledge you will use in **Step 5**. If not, review this section, spend more time observing, and discuss your observations with a supportive other. Stay with this until you can easily see the antecedents, goals, and consequences underlying a variety of your child's most desirable and most undesirable behaviors in many situations.

Activity Checklist: Am I Putting the ABC's of Learning Together?

____ I have spent some time observing my child and have made a list of my child's most and least desirable behaviors.
____ I understand the goals, antecedents, and consequences underlying some of my child's socially desirable behaviors.
____ I understand the goals, antecedents, and consequences underlying some of my child's undesirable behaviors.
____ I have observed some of my child's most desirable and undesirable behaviors and have delineated their goals, antecedents, and consequences in most of the six types of target activities.

Step 5. Use the ABC's to Increase Your Child's Learning Opportunities and Teach Your Child New Skills or Behaviors

Rationale. *Every interaction you have with your child is a potential learning opportunity.* To mobilize more of the many opportunities you have, you need to be aware of all the potential reinforcers that present themselves. Often these are things your child desires—food and drink; attention; favorite objects; comfort and affection; safety and security; interesting sights, sounds, and events; pleasant touch and movement. Or they may be unpleasant stimuli your child wants removed, such as hunger or thirst, noxious sounds (e.g., vacuum cleaner), unpleasant

sensations (e.g., sticky hands or a messy diaper), frightening stimuli, or barriers to your child's goals (e.g., fixing a broken toy, opening a cupboard or refrigerator).

Activity: *Make Sure Your Child Is Communicating Goals as Maturely as Possible*

You can corral these opportunities to work on your child's behalf by asking yourself these questions every time you deliver something your child wants or remove something your child dislikes: How is my child communicating her desires? Is she using the most mature communicative behaviors she is capable of to indicate her goals? Or am I providing all these reinforcers to a child who is doing little to communicate her goals? *These are really important questions*. One parent who asked herself this question said, "You know, he is like the Little Prince. He doesn't have to do a darn thing—we all meet his every need without him exerting any effort at all!" It was a big insight for her. She was not asking of her son what we typically expect other children to do: *to communicate as well as they can*. How often have we all said to a whiny child, "Use your words," or cued a child who said, "I want more milk," to add "please" to that demand? Or to correct a child who grabs by taking the toy away, giving it back to the first child, and telling the grabber to "ask nicely"? We expect children to use their current communicative ability to achieve their goals, and we cue them, or *prompt* them, to use the desired behavior.

So think about what communications your child is easily capable of: Reaching? Pointing? Vocalizing with intent? Imitating sounds? Making a choice between two? Looking at you to communicate? Whatever communications are currently present in your child's repertoire and are easy for your child to do—that's how your child can be communicating his goals. When he is using undesirable behaviors to communicate, such as whining, screaming, or tantrums, do these things: Ignore those behaviors (extinguish); cue the desired behavior by modeling or prompting an appropriate behavior that will allow the child to achieve his goal (a reach or a verbal request); expect your child to use the appropriate behavior; and then allow your child to reach his goal (reward).

Make a list of your child's current communications, both verbal and gestural. These are the tools your child has for communicating her needs and desires. Now keep those in mind when you next start to provide your child with something you know she wants. Clearly show your child it is available; that is the A—the antecedent. But hold back and wait to deliver it until your child has communicated for it, using one of the communications you have listed. Wait for the B—the behavior—and cue it if your child needs some help. Once your child communicates well, *then* deliver the C—the consequence, the reinforcer for your child's communication.

What if your child does not produce the communication or uses an unwanted

behavior, such as whining? Ignore the unwanted behavior and prompt the behavior that is appropriate. Help your child do it. If your child can say a word, model the word. If your child can reach, put the object within reaching distance. If your child can point, model the point. If needed, physically guide your child through the response you are teaching. After your child acts, deliver. You have provided a *learning opportunity*—a full ABC sequence.

Let's say the situation involves giving your child a peanut butter sandwich, and your communicative goal for your preverbal child for her to use her voice to communicate requests. Let's say you have cut the sandwich up into eight tiny bite-sized pieces for your child. If you hold the plate toward your hungry child (A), and your child reaches and says "Mmmm" (B), and you hand the plate over (C), you have provided one learning opportunity for your child.

Now let's say you are sitting at the table as well, and when your child reaches and says "Mmmm," you provide one piece of the sandwich. Your child stuffs it into her mouth and reaches and says "Mmmm" again. You deliver another piece. Your child's drink is also beside you, out of your child's reach. Your child reaches for the cup. You hold it up and say "Drink?", and your child reaches and says "Mmmm." You give the cup over, your child has a drink, *and you take it back.* Over this meal, with the sandwich, the drink, and a few pieces of banana that you have also cut up, you have provided 15 or more learning opportunities for your child to learn to use her voice to request. And that doesn't take into account the number of times you have also imitated your child by taking a bite of your own sandwich, saying "yum yum," and having a little imitation exchange (more learning opportunities).

So here is an important way to start to build more learning opportunities into your child's day—by being aware of the many antecedents that precede the behaviors you are teaching, the many times you deliver reinforcers by meeting your child's goals, and the many ways you can help your child develop and practice an appropriate communicative behavior of some type before you deliver.

Activity: *Observe Your Child's Behavior for Occurrences of the ABC's*

Spend some time reviewing your day with your child. Think about the times today you gave your child something you knew he wanted. Think about the times you removed something or changed something you knew was bothering your child. List them in the left-hand column of the form on the next page. Those are the reinforcers, or potential reinforcers, that you provided your child. For each one, remember what your child did that resulted in your action—how your child communicated his need or desire. Write that on the right-hand side. Here are the learning opportunities that you provided your child in these situations. If there was no child behavior that preceded your rewarding action, write down "None" in the right-hand column. There was a missed opportunity for learning. Over

Observing the ABC's

Reinforcer I provided	Child behavior that was reinforced

the next few days, see if you can become more aware of these potential missed opportunities, and instead wait for a child communication or prompt your child to communicate in some way before you provide the consequence, *so that you are turning missed opportunities into learning opportunities.* Make extra copies of the form if you need more space.

Step 6. Change Unwanted Behaviors

Rationale. All little children (and most adults as well) have habits that are not very pleasing or attractive. In the lists you have just made, you may have identified some of your child's behaviors that you are not so happy with. Your child may scream to communicate a desire, or drag you by the hand, or bite to avoid someone or to gain access to a desired object. Your child may fall on the floor and bang her head when her brother takes a toy or when you refuse to give her another candy bar. Why does your child do these things? You may have already figured that out: In completing the activities earlier in this chapter, you may well have run into some of these unwanted behaviors. By analyzing the ABC sequence of these behaviors, you have "evaluated" them. You have learned the functional relations that supported the behaviors—the A and the C. If your child has some unwanted behaviors and you have not yet identified their ABC sequences, now is the time to do that. In this final step, we are going to explain how to help your child learn more acceptable behaviors to replace these unwanted ones.

Activity: *Identify an Unwanted Behavior and a Possible Replacement*

A (antecedent)	→	B (behavior)	→	C (consequence—desired outcome)	=	Increase in behavior (learning)
A (antecedent)	→	B (behavior)	→	C (consequence—unwanted outcome or none)	=	Decrease in behavior

Choose one of your child's unwanted behaviors that occurs often and that has a clear ABC frame—a behavior you would really like to change.[1] Now remember

[1]Keep in mind that sometimes unwanted behaviors, such as crying, screaming, and tantrums, are signs that your child doesn't feel well. Remember that in Chapter 1 we have discussed the fact that children with autism sometimes experience gastrointestinal problems, food sensitivities, lack of sleep, and other health-related problems. Recall also that sometimes it is difficult for children with autism to tell us that they are in pain or where the pain is occurring. If your child shows a sudden change in behavior, such as suddenly becoming more fussy or aggressive, and it doesn't appear to be linked to a specific antecedent or consequence, consider

the ABCs of learning. Look at your child's goal without expecting that your child will change goals. Ask yourself: "What does he want? What is his goal?" *After you have answered that question, ask yourself:* "What do I wish he would do instead to ask for what he wants or achieve his goal?" If he screams to get out of doing something he doesn't like or to get a toy, what do you wish he would do instead of screaming to request that you stop what he is being asked to do or to have access to the toy? If he bangs his head on the floor when you take his pacifier away, what do you wish he would do instead to achieve his goal? The behaviors you wish to see instead of the unwanted behaviors are called ***replacement behaviors***.

➔ *Rule 7.* A good replacement behavior must be as easy for the child to do as the unwanted behavior, and must result in the same reward as quickly as does the unwanted behavior. The replacement behavior will work only if it is as functional—as efficient, as effective, as easy—as the unwanted behavior. The replacement behavior already has to be in your child's repertoire, and you have to be able to prompt it easily.

Activity: *Teach the Replacement Behavior*

So, with Rule 7 in mind, focus on the unwanted behavior you would like to see changed, and think about what else your child could do—now, easily, efficiently—to achieve the same goal. That is your ***replacement behavior***. Write down how the sequence will look: What is the antecedent (A); what is your replacement behavior (B); what is your child's goal; and what is the consequence (C), or reward, for using the replacement B? Got it?

Here is an example. A = your Pepsi. Unwanted B = grabbing. Replacement B = pointing. Child's goal = your Pepsi. C = your Pepsi. Now think about how you are going to prompt your child to do the replacement B as soon as the A occurs and *before* the unwanted B occurs. Get ready to prompt the replacement B, and then deliver the C right away. If the unwanted B is already under way, ignore it, prompt the replacement B, and then provide the positive C.

Example: You get your Pepsi and sit down on the couch. Your daughter appears and heads for the Pepsi. You pick it up, and as she looks at it, you say, "Want a drink? Point. Point to Pepsi." You model, she points, and you give her a sip, but not the whole can. You take it back and get a drink. She reaches and you say again, "Point." She points and gets a sip. This goes on a few more times, until she is pointing without any instructions. No grabbing has occurred at all.

---

having your child's health status evaluated by a pediatrician. Similarly, if your child is not sleeping well or is eating poorly, it will be much more difficult for her to refrain from being irritable and fussy. By making sure that your child is healthy, you set the stage for your child to be more cooperative, show fewer problem behaviors, learn more easily, and generally be a happier and more engaged child.

What about Molly? *As described earlier, Molly screams and grabs when her sister gets a glass of milk, and Dad tells her sister to give it to Molly and get another. A = sight of milk. B = scream and grab. Goal = wants milk. C = gets milk. Dad has to think of a replacement behavior for screaming and grabbing, and Molly has not yet learned to speak. What behavior can Molly use to request a glass of milk? Pointing to the milk? Signing "drink" or "please"? Vocalizing and making eye contact? Molly's family has to decide what kind of appropriate communication Molly should use when she wants something from someone else. They decide on a simplified "please" sign that their speech therapist has suggested—her hand held against her chest. Now her parents need to create the learning opportunities for her to learn this replacement communication.*

The antecedent occurs: Molly sees big sister Tina get a glass of milk from the refrigerator, and Molly screams and grabs at Tina to get the milk. Dad goes to Molly, takes her hands off Tina, puts her hand to her chest to make the "please" sign, and says to Molly, "Please." As soon as Molly finishes making the sign, with Dad's help, Tina cooperatively hands Molly the milk and gets another. Although this is a step in the right direction, Dad thinks this through later and notices two things he would like to improve on: (1) Molly is still screaming and grabbing, and (2) Tina is still losing her original glass of milk. The next time, Dad is ready. When Tina asks, Dad encourages her to get two glasses of milk, and Dad moves right beside Molly. Tina gets the glasses of milk, and when Dad sees Molly look at the glasses of milk, he immediately walks her to Tina and helps her sign "please." Then Tina gives Molly the second glass of milk, feeling very proud that she has helped her little sister learn to communicate. Now Dad has assured that Molly receives the milk for making the sign and not the scream.

See what has happened? The same antecedent (seeing Tina with the milk) is now being linked with a desired behavior—an appropriate communication—which results in the same reinforcer (the milk) that has previously supported the unwanted behavior. Over time, if the family is consistent with this new routine, the "please" sign will become linked to the sight of the milk (and all other objects she wants from another person), because that is the only way Molly will get the milk. The glass of milk will support a positive behavior rather than an unwanted one, while Molly learns a more useful and acceptable communication, and she still gets the milk.

With this example in mind, go back to the unwanted behavior you have zeroed in on for your own child and consider how you will help your child use the replacement behavior for attaining her goal. Imagine how you will help your child, or prompt your child, to carry out the replacement behavior and then deliver the reinforcer. Start practicing as soon as you can imagine it.

Caution! A coping strategy that families sometimes use in the face of unwanted behaviors is to try to avoid problem behaviors by placing fewer and fewer demands or expectations on the child. Although this is a very natural

response to tantrums or aggression, it backfires in two ways, both of which over time reduce the child's learning. First, it takes away learning opportunities. If the child does not have to do anything to gain what he wants, then no new learning is taking place. Second, it reinforces either very immature behavior, like whining or grabbing, or unwanted behavior, like Molly's screaming. Avoiding the problem behavior by giving in earlier does not change the use of unwanted behavior. Only by actively teaching a more desirable response can you really change your child's behavior. Your child can learn a more desirable response. Your child has learned one way of responding, and your child can learn a more desirable way as well.

Summary of Step 6

If you have followed along and carried out the preceding activities, you likely have learned how to use your everyday interactions to support your child's more desirable social and communicative skills. You also know much more about why your child does all those things you wish she wouldn't do, and you know what consequences, or rewards, are supporting your child's use of those unwanted behaviors. You have developed some ideas about how to replace them with more socially desirable behaviors, and you have some ideas about how to avoid rewarding those unwanted behaviors. You have tried to prompt your child to use a replacement behavior before the unwanted behavior even occurs, and you have been able (we hope) to reinforce the replacement behavior. See if you agree with most of the statements in the following checklist. If so, you are now armed with (1) knowledge and skills for providing more learning opportunities within your everyday activities with your child; and (2) strategies for replacing your child's unwanted behavior with more socially acceptable, communicative behavior. If not, review this last section of the chapter, and discuss these concepts and your observations with a supportive other—ideally, someone who also understands the basics of behavior, like one of your child's professional team members. Mastering these concepts will help you help your child for many years to come (and your other children as well!)

Activity Checklist: Am I Understanding and Dealing More Effectively with Undesirable Behaviors?

____ I have spent some time observing my own behavior and my interactions with my child when I am providing my child's preferred objects and routines.

____ I am much more aware of what behaviors my child is using to request these preferred objects and routines.

____ I am developing more skills in using each of these situations as a

learning opportunity, by either rewarding or cuing my child's use of more mature communicative behaviors.

____ I have had some successful experiences in replacing one or more of my child's unwanted behaviors with a more desirable communication or behavior.

____ I am much more aware of my tendency to provide positive consequences when my child uses an unwanted behavior, and I am doing it less.

____ I am seeing positive effects of my new knowledge in my child's progress in learning to communicate to reach his or her goals.

____ I am seeing positive effects of my new knowledge in my child's decreasing use of unwanted behaviors that I have focused on.

____ I am creating more learning opportunities during daily play and caregiving activities by using the ABC's of learning.

____ I am creating more learning opportunities in most of the six types of target activities.

Chapter Summary

Behavior can be understood in terms of what takes place before the event (antecedents), as well as what follows it (consequences). This relationship or understanding of antecedents, the behavior itself, and consequences can be thought of as a set of linked actions, events, and circumstances that occur together in an environment. Understanding antecedents and consequences and their combined influence on behavior allows us to understand how a behavior functions for a child, and thus helps us know how to teach new behaviors and reduce unwanted behaviors in a systematic and effective way.

- Pay attention to times when you find yourself delivering positive consequences for behaviors that you would rather not reinforce: screaming, throwing, crying, grabbing, fussing, whining, not using words/gestures.
- Pay attention to times when your child ignores your instructions or requests and continues to do what he was doing. In these situations, your child is being rewarded for ignoring you (by getting to do what he wants to do).
- Pay attention to all the times you see your child wanting something and, through your skillful teaching, communicating nicely and receiving what he wants. You are providing great reinforcement for good behavior and an important learning opportunity.

- Pay attention to all the times your child communicates in an unwanted way, through immature behavior or unwanted behaviors, and you hold back on providing what he wants (and thus help extinguish the unwanted behavior). Instead, you prompt your child to request or behave in a desired way and then deliver the reward, supporting your child's learning.

Every time you reinforce a desired behavior, you provide a learning opportunity for your child. Every time you prompt your child to use a more mature or appropriate skill and reinforce that new skill, you provide a learning opportunity. Every time you model a desired behavior and your child imitates you, you provide a learning opportunity. And every time you make sure an unwanted behavior is not reinforced but rather replaced by a more desirable behavior or skill, which gets your child what he wants, a learning opportunity has occurred.

Children with autism need to learn and are very capable of doing so. Teaching them is about creating learning opportunities. Understanding the ABC's of learning helps you think about how to create learning opportunities to stimulate development and build more mature behavior.

Refrigerator List

Goal: To use the ABC's for understanding and teaching new behaviors.

Steps:

- ✓ **Everything happens for a reason! Identify your child's goals.**
- ✓ **What happens after your child's behavior solidifies it.**
- ✓ **What is your child doing to achieve his or her goals? Is it what you want?**
- ✓ **Be aware of the rewards you are providing and what behavior you are rewarding in the process.**
- ✓ **Use your child's goals in everyday activities to teach new skills.**
- ✓ **What do you wish your child would do instead? Answer this question and replace unwanted behaviors with more acceptable ones.**
- ✓ **Replacement behaviors need to be at least as easy, efficient, and effective as the behaviors you are trying to replace.**
- ✓ **The rewards that follow your child's new skills are what will make them stick.**