Chapter 1
Assessment Case Studies for Preschool to School-Age Children

Abstract Behavior assessment is the first step in developing behavior support programs. Before attempts at changing behaviors can be made, information about target behaviors must be gathered, analyzed, synthesized, and translated into individualized support programs. This involves gathering information about the behaviors in question, the individuals, the specific environments, and individual histories of reinforcement and punishment in those contexts. More specifically, it is important to begin to gain insight into what the behavior in question looks like and what function it serves for the individual; when and where behaviors occur; why behaviors occur in some contexts, at certain times, and not in other contexts, at other times; and how the individuals and their skills, abilities, strengths, and limitations interact with the environment and his or her history of reinforcement and punishment to produce the observed behavior. The goal of behavior assessment is to develop a hypothesis as to why particular behaviors are occurring—their functions—and determine how the individuals might best be supported to be successful in the environments in which they are currently experiencing difficulties. The desired outcome is not only cessation of target problem behaviors, but also the learning of new skills that will provide access to reinforcement, make the problem behavior unnecessary, and contribute to improved quality of life for the individual involved. In this chapter, entitled "Assessment Case Studies for Preschool to School-age Children," behavior assessment principles, processes, and practices are explored through five case scenarios involving preschool and school-age children in home, school, clinical, and community settings.

Keywords Preschool · School-age children · Behavior assessment · Assessment · Behavior functions · Quality of life · Reinforcement · ABA

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CASE: i-A1

Why Won't Simon Listen To Me?
Setting: Home Age Group: Preschool

LEARNING OBJECTIVE:

- Design a behavior assessment plan.

TASK LIST LINKS:

- **Identification of the Problem**
  - (G-01) Review records and available data at the outset of the case.
  - (G-02) Consider biological/medical variables that may be affecting the client.
  - (G-03) Conduct a preliminary assessment of the client in order to identify the referral problem.
- **Assessment**
  - (I-01) Define behavior in observable and measurable terms.
  - (I-02) Define environmental variables in observable and measurable terms.
  - (I-03) Design and implement individualized behavioral assessment procedures.

KEY TERMS:

- **Behavior Consultation**
  - Behavior consultation typically has two purposes: (1) a behavior-change program for the individual displaying the target behavior; and (2) supporting the individual that will be implementing the intervention. It often utilizes a "mediator model" where someone other than the consultant (e.g., parent, teacher, and instructor therapist) implements ABA principles and processes. Behavior consultation requires both knowledge of the principles and processes of ABA (i.e., assessment procedures, program design, data collection, and evaluation), as well as skills in consultation (e.g., professional rapport and relationship building, collaborative problem solving, active learning techniques, training and support, and performance feedback) (Edmunds et al. 2013; Sanetti et al. 2013).
- **Behavioral Interview**
  - A behavioral interview is a discussion with those supporting the individual displaying the behavior identified for change such as a parent, teacher, or caregiver. In some cases, the individual that will be receiving the intervention may also be involved. These discussions attempt to identify problematic behaviors, determine the frequency at which they may be occurring, and identify associated antecedents and consequences (i.e., what seems to occur immediately before and after the behavior). Although these interviews focus on indirect accounts of the behavior, they can provide clues to the

environmental variables that may be evoking and maintaining the target behavior. Behavioral interviews are often the first step in the functional behavior assessment process (O'Neill et al. 1997).

- **Developmentally Appropriate**
  - Behaviors that we expect from individuals of a particular chronological age or behaviors that most children of a particular age display, such as motor, language, cognitive, or social skills, are often referred to as developmentally appropriate behaviors. While children vary somewhat in terms of when they may achieve a particular skill, there are certain expectations, or sets of skills and behaviors, that are expected at certain ages. For example, by 4 or 5 years of age, children are expected to print letters, use a fork and spoon, and dress and undress independently (Health Canada 2013).
- **Social Significance**
  - Socially significant behaviors are those that are important to the individual that will be receiving an intervention. They are deemed socially significant when they help the individual function effectively, independently, and successfully in the environment. These may include social, language, academic, daily living, self-care, and/or recreational behaviors (Baer et al. 1968, 1987; Horner et al. 2005).
- **Target Behavior**
  - A target behavior is a behavior that is selected for change. It may be problematic behavior selected to decrease, or a new behavior or skill that is selected to increase. A target behavior is selected because its change would improve quality of life for the individual undergoing behavior change (Bosch and Fuqua 2001).
- **Typically Developing**
  - Children who are meeting developmental expectations and are displaying the behaviors and skills expected of a child of their age may be termed "typically developing" (Health Canada 2013).

Why Won't Simon Listen to Me?

Simon was a pretty perfect baby. His parents heard charming phrases thrown about when others discussed their little one: "Simon is just such a good baby!", "He will go to anyone!", "He laughs and smiles all the time!" They often made eye contact a little smugly over the brown curls on Simon's head, smiling together at the joy this feedback brought to their little family. Baby Simon met every single one of his typical milestones at just the right moments. Simon's parents knew this as they

diligently transported him in his stroller to the local university medical center every few weeks, where medical doctors in training practiced their professional use of developmental assessment tools. Everyone—parents and professionals—agreed that Simon was a robustly healthy, **typically developing** child.

Simon grew—quickly, it seemed—into an equally delightful toddler. He was quite content to follow one of his parents, his six-year-old brother, or his eight-year-old sister around the house, the yard, or around the quiet suburban community. He was often found following one or the other of his siblings around, chortling while he joined in—or imitated—household chores, dramatic play, or his sister's wild dance moves! He was also quite happy to explore on his own, moving from room to room in their cozy bungalow. One day, he was only out of sight for a moment, when he was quickly discovered attempting to plunge the already-sparkling clean toilet. He was easily redirected, however, happily compliant in the continued attention of his family members, no matter what the context.

At the age of three, Simon transitioned part time into a childcare center—another service provided at the city's university center. It was the same time when his temperament seemed to shift. Although Simon appeared to transition without difficulty into the childcare setting, function extremely well in group play with other children his age, and bonded strongly with the educators at his center, his parents thought his behavior at home to be quite different. Simon seems to vary from **developmentally appropriate** behavior at school, to behavior at home that appears to be different than most children his age.

Late one night, after their three children were tucked in bed, either sleep or reading with bedside lamps glowing, Simon's parents—yet again—were talking about Simon's behavior far away from the listening ears of their three young children.

"He seems to listen more to me than he does to you," started Simon's mother. Simon's father nodded quickly, his eyebrows raised.

"Yes. Like today, when I ask him to clean up his fridge magnets from the table so that we could all have dinner," Simon's father recollected. "That was a bit of a disaster. I think maybe there were two things he didn't like: being asked to clean up, and he also likely figured out that coming to the table for dinner was on the horizon. These seem to be two of his hot buttons. When we press those—he's off!"

"I agree," nodded Simon's mother, emphatically. "I can hardly believe this is our little Simon. Where on earth did he learn that fighting and yelling with those little clenched fists of his was the right way to get along with everyone? I am really at a loss as to what we should do next. Let's see how tomorrow goes, and then maybe we are going to have to get some help. I am really at the point where I wonder if we should just not bother to ask him to do *anything*. It seems like it would be easier to give in than to figure out how to 'make' him do what we ask. Why doesn't he just listen?" Simon's father was well aware that this was a question that could not be answered—at least not right at the moment.

The next morning, however, was a breaking point for Simon's family. While trying to get a busy family of five ready for work, school, and childcare, Simon lay

on his back in the midst of the narrow breezeway. His feet were propped up against the wall, and caught up in a fabric and belts of a number of spring coats. He thumped his heels rhythmically, causing the coats to fall in a messy pile, right into a boot tray filled with a wet puddle of melted slush. All of these were not happening in a void or without comment from those in Simon's family. Simon's father had asked him—quietly and kindly—to please get off the floor and put on his coat and boots, two or three times, with the frustration and volume level becoming more prominent with each repetition. Simon's siblings also "helped out" by stepping alongside their father and almost shouting, "Hurry up! Come on, Simon!" Their frustration and disgust was quite clear as they sighed and moaned while they picked up their soaked outdoor clothing. These interactions, however, seemed to get Simon's attention, and he started giggling about and rolling on the floor, while making no efforts to follow through with the direction he was given. Today, like many days, this ended in a physical altercation, Simon's siblings pulling and tugging at Simon, and Simon smacking wildly yet aimlessly until he came into contact with his brother and sister.

When everyone was finally lifted, seated, and belted into the backseat of the family sedan, Simon's parents again looked at one another, already exhausted. "Okay," said Simon's mother, knowing what she needed to do without any words exchanged, "I will call them again today." Previously, Simon's mother had been in contact with a behavior consultant—a Board Certified Behavior Analyst (BCBA)—recommended to her by the childcare center. At the time, though, she had not been willing to move ahead with **behavior consultation**. The BCBA had suggested beginning with a **behavioral interview**, as a starting point to pinpoint **socially significant target behaviors**. As she thought about what had been happening at home recently, she now felt prepared to move ahead. During her first break at work that morning, she took a deep breath, steadied herself, and took the first major step toward professional support for Simon—calling the BCBA.

The Response: Principles, Processes, Practices, and Reflections

Principles

(Q1) What is one behavior that you would identify for change for Simon? Why did you choose this behavior? Is this a socially significant target behavior? If so, please explain why. If not, please explain why not, and how you might ensure that a socially significant behavior is selected for change.

(Q2) The early stage of planning for behavioral intervention often involves developing a hypothesis about the function, or purpose, of a target behavior. An "Antecedent-Behavior-Consequence" (or ABC) chart can help to develop such a hypothesis. Extract information about one of Simon's challenging behaviors from the above case example and complete the attached ABC chart. Once completed, answer the following questions: What occurred immediately before the target behavior you selected? What occurred immediately following the behavior? Why is this important information (Table 1.1)?

Table 1.1 Sample ABC observation form

Individual:_____ Observer:_____ Setting Events: _____	Date:_____ Setting:_____	
Antecedent	Behavior	Consequence

Process

(Q3) Using the chart below as a guide, consider the following questions about the target behavior you selected: How might you measure the behavior? What type of data collection would you use? Who would be responsible for collecting these data? How often should data be collected? In what setting or settings should data collection happen? How do you think these data will help inform your assessment and guide your intervention planning (Fig. 1.1)?

(Q4) Consider the following ethical dilemma: Simon's parents decide that they would like you, as the behavior analyst, to focus on addressing a different target behavior than the one you have identified—a behavior that you believe to be of lesser social significance for Simon when compared to the behavior you selected for change. How might you approach this dilemma?

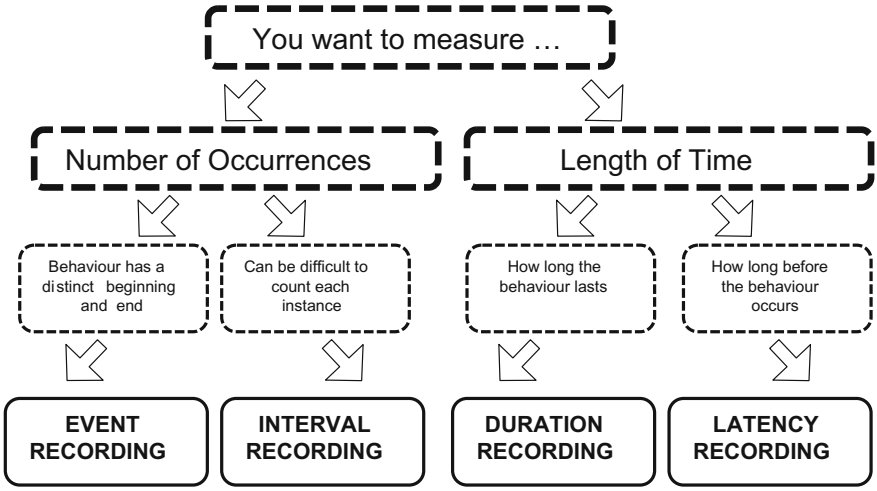

Fig. 1.1 Flowchart to help determine the type of data collection to use when selecting a data collection method to use (Bicard et al. 2012)

Practice

(Q5) Using the example below as a guide, write a behavioral objective for one of Simon's behaviors. There are four components that should be included: (1) reference to the individual, or who will conduct the behavior, (2) the target behavior, (3) conditions for the behavior to occur, and (4) criteria for acceptable performance (Fig. 1.2).

For example:
Navier will do up his zipper on his coat independently when asked to "put on his coat" by his teacher for 3 consecutive days in a row.

(Q6) Sometimes, when you are observing an individual to collect data about a behavior, your presence as an observer may influence the behaviors that you see (e.g., if someone knows they are being watched, they might change their behavior). Known as reactivity, this can be a concern because it might prevent you from collected data that accurately reflects the extent to which the target behavior is occurring. How might you observe occurrences of Simon's target behavior without your presence influencing the data being collected?

_____ will _____
(Name) (Target Behavior)
when _____ for _____
(Conditions)
_____.
(Criteria)

Fig. 1.2 A guide to assist in writing a behavioral objective

(Q7) Why is Simon's age and stage of development important to consider as part of your assessment? How might you gather information about his developmental stage? Tools such as the Hawaiian Early Learner Profile (VORT) can assist in identifying developmental levels (see http://www.vort.com/HELP-0-3-years-Hawaii-Early-Learning-Profile/).

Reflection

(Q8) When considering the case of Simon's behavior, what might contribute to a successful behavioral assessment? Why? What might pose challenges? How might you overcome these challenges?
(Q9) Simon's parents are struggling with accepting a relationship between his problematic behavior and environmental events, and instead believe that his behavior may be due to an internal state (i.e., how he is feeling in particular circumstances). How would you explain the relationship between the environment and Simon's behavior?
(Q10) *Thinking* about your role as a behavior analyst, how might you balance addressing the immediate behavior difficulty with focusing on longer-term behavioral, educational, and social goals for Simon?

Additional Web Links
Defining Behaviors:
http://iris.peabody.vanderbilt.edu/wp-content/uploads/2013/05/ICS-015.pdf
Seeking Outside Help:
http://csefel.vanderbilt.edu/documents/dmg_seek_outside_help.pdf
Developmental Milestones:
http://www.cdc.gov/ncbddd/actearly/milestones/index.html
Behavior Interviews:
http://challengingbehavior.fmhi.usf.edu/explore/pbs/step3_interviews.htm

CASE: i-A2

WHY CAN'T ERIN JUST GET ALONG?
Setting: School Age Group: Preschool

LEARNING OBJECTIVE:

- Describe behavior using the three-term contingency of applied behavior analysis.

TASK LIST LINKS:

- **Measurement**
  - (A-01) Measure frequency (i.e., count).
  - (A-02) Measure rate (i.e., count per unit time).

  - (A-04) Measure latency.
  - (A-05) Measure inter-response time (IRT).
  - (A-12) Design and implement continuous measurement procedures (e.g., event recording).

- **Fundamental Elements of Behavior Change**
  - (D-15) Identify punishers.

- **Behavior-Change Systems**
  - (F-07) Use functional communication training.

- **Identification of the Problem**
  - (G-03) Conduct a preliminary assessment of the client in order to identify the referral problem.
  - (G-04) Explain behavioral concepts using nontechnical language.
  - (G-06) Provide behavior-analytic services in collaboration with others who support and/or provide services to one's clients.

- **Measurement**
  - (H-01) Select a measurement system to obtain representative data given the dimensions of the behavior and the logistics of observing and recording.
  - (H-02) Select a schedule of observation and recording periods.
  - (H-03) Select a data display that effectively communicates relevant quantitative relations.

- **Assessment**
  - (I-01) Define behavior in observable and measurable terms.
  - (I-03) Design and implement individualized behavioral assessment procedures.

KEY TERMS:

- **Intensive Behavioral Intervention (IBI)**
  - IBI is an application of the principles and processes of applied behavior analysis, typically used with children with Autism Spectrum Disorder. It often involves an intense schedule of 20–40 hours of direct service each week. Programming includes a focus on reducing challenging behaviors and increasing a broad range of socially significant skills including communication, socialization, self-help, academics, and play (Howard et al. 2005).

- **Time-Out**
  - Also known as "time-out from positive reinforcement," this procedure involves the removal of access to reinforcement for a period of time as a consequence following displays of specific problematic behaviors (Cooper et al. 2007).

- **Functional Communication**
  - Functional communication is a form of behavior that conveys what we want, need, and/or are feeling, to others. This may involve verbal (e.g., words) or nonverbal behaviors (e.g., gestures). Communication is functional if it serves a particular purpose or results in a desired outcome (Dutton 2011).

Why Can't Erin Just Get Along?

"Home time!" exclaimed Erin's grandfather, who had just arrived at Erin's Kindergarten classroom at Tall Trees Therapy School, stomping snow from his boots near the inside doorway to Erin's classroom. Erin's teacher at the specialized setting, Ms. Grimes, looked up and smiled. Moving over to Erin's favorite place between the classroom's tablet computer table and the carefully stacked bins of math manipulatives, Ms. Grimes made sure she had Erin's attention. Then, she repeated the **verbal prompt** that Erin's grandfather had used and paired it with a color photograph of home taken from Erin's daily visual schedule. Without much difficulty—this time—Erin uncurled her legs, rose, and moved toward her grandfather, grasping her picture of home tightly in both hands. Ms. Grimes could hear Erin whisper quietly what she was sure was the word *home*. After Erin and her grandfather had departed from the Kindergarten classroom, Ms. Grimes had a few moments without lunch duty or yard duty where she had sometime to review Erin's Antecedent-Behavior-Consequence (ABC) chart, which she had been asked to complete by the school's behavior consultant. Ms. Grimes thought about Erin's afternoon program of individually designed home-based and privately funded **Intensive Behavior Intervention**. Erin's grandfather had been concerned about how expensive this intervention program has been, but recently has told her how pleased he is with Erin's progress.

Looking at the ABC chart, Ms. Grimes counted the number of so-called challenging behaviors (as she was learning to call them) which Erin had exhibited this morning alone. Across the top of the sheet was written "Target Behavior: Aggression" and a description of aggression which read: "Erin hits other children with her fist and pushes other children to the ground with the flat palms of both hands." Moving her eyes downward on the page, Ms. Grimes counted 1, 2, 3 … 8 ("Eight!" she exclaimed aloud) incidents of aggression with Erin and her classmates, just today. "I can't figure out why this isn't a problem at home for Erin and her grandfather," she murmured to herself, shaking her head with frustration, and *thinking* back through the day so far.

Today, Ms. Grimes had tried hard to uphold the social practices she was so proud of in her therapeutic classroom. When she saw that Erin's peers were not inviting Erin to play during child-directed center-based learning, she had helped out. She went to Erin and helped her to transition over to the squares of foam flooring in front of the math manipulatives—Erin's favorite—and poured out a pyramid of tiny rubber

animals. She called one of Erin's peers over and suggested a patterning activity for them. She modeled a pattern on the floor and supported the children in developing their own patterns with these educational toys. But in her busy classroom, her attention was again inevitably drawn away from supporting Erin and her peer. After all, most of their students had extra-special needs! Out of the corner of her eye, Ms. Grimes almost immediately spotted a problem when she moved away from Erin. Erin reached out, put her hands roughly on the chest of her classmate, and pushed hard. In the flurry of tears that followed, Erin's peer landed hard on her bottom. Ms. Grimes had directed Erin to a time-out, telling her sternly, "No pushing!"

But it doesn't seem to work, thought Ms. Grimes. *No matter what I say to Erin, and no matter how many time outs I give her, nothing changes. At least, nothing changes for the better, except when she is doing intensive 1:1 work. It seems that whenever I encourage her peers to play with her, things get really bad really quickly. First thing this morning, I brought Ali over to the book center where Erin was flipping through a book, when they were both looking at a book I walked away. I turned back just in time to see Erin push Ali and Ali fall to the ground. As a result, I had to bring her to time out, and the morning wasn't even an hour in. No matter how much I try to supervise, I just can't be there all the time. When "play" happens, there always seems to be yelling and crying afterwards. After her time out from pushing Ali, she wondered over near a shelf containing a basket of textured squares. Pauline was nearby, so I encouraged the two to try to match the pairs of textures together. I stopped supporting their interactions and just watched, amazed at how well they were doing with one another, that is, until the class phone rang. While answering the phone I saw Erin hit Pauline. So it was back to time out, a great interaction turned bad again! I simply can't see the benefit to encouraging these peer interactions! I had all these excellent goals about friendship in Erin's Individual Education Plan, but we don't seem to get there—or even part of the way there! I really wonder if Erin is going to be able to stay in this social environment of ours. If the other parents keep complaining the way they are now, our principal might feel like she needs to move Erin across town to a more restrictive setting, or maybe do that expensive home program all day*. "Well," she said, interrupting her train of thought with her own words, "this is not solving anything." She put aside the ABC chart and her strong concerns about Erin and her behavior, and started to prepare for the second half of the instructional day. At the end of the day when all of her students had been bundled up and delivered to their parents, their buses, or their older siblings for a short walk home, she gathered her thoughts and her behavioral data, and headed off to the school's resource room for an after-school meeting with the behavior consultant, Erin's grandfather, and their IBI therapist. *I hope this is a short one*, she thought again to only herself. *I still need to get ready for our 100th day of school celebration tomorrow!*

When she arrived at the resource room after her long and busy after-school routine of assisting students who were still learning to be independent, she was greeted with smiles and thanks for the clipboard of information she brought with her to the meeting already in progress—quite the opposite of what she had expected. "This is really great," enthused the consultant. "You have already collected five full mornings of ABC data on that target behavior we had **prioritized**.

I am so pleased. This is really going to help us figure out Erin's patterns of challenging behavior. In fact, I think we should do the same thing at home, so we have information about all of Erin's environments where she spends a significant amount of time."

"But … just a minute," interrupted Erin's grandfather. "She doesn't do that at home. She doesn't hit me, or push me, and she certainly doesn't hit or push her older sister. What's the point? The only thing I really notice for sure is that she *seems* to be really frustrated when she is trying to tell me things. Usually I don't understand, and I think she finds that quite upsetting."

"Well," paused the consultant, "we need to have data on paper. And her therapy time is important too, which also happens at your house. Are you sure that she is never aggressive like this when the therapists are doing IBI at home?"

Erin's grandfather paused, thought for a few minutes, and eventually responded, "Maybe you are right. I don't really know what happens in terms of disruptions during the lessons that are going on. Usually I take that time for a bit of a break, and a lot of the time I am not even home: Erin's grandmother usually takes that shift around the house. Maybe you can walk me through what we need to do."

The positive tone of the meeting continued and ended much the same way, with consensus all around, a plan for data collection, and a goal set to figure out how to best support Erin in developing **functional communication** skills. Ms. Grimes only left with one thing on her to-do list: to talk with the Speech-Language Pathologist tomorrow when she will be in the Kindergarten classrooms doing screening for articulation issues with the whole class. *I think I can handle that!* She thought. *But can I handle Erin?*

The Response: Principles, Processes, Practices, and Reflections

Principles

(Q1) *Thinking* about Erin and the case outlined above, what might be one behavior that you would identify for change? Why did you choose this behavior? Is this a socially significant target behavior? If so, please explain why (Table 1.2).
(Q2) The early stage of planning for behavioral intervention often involves developing a hypothesis about the function, or purpose, of a target behavior. After completing the "Antecedent-Behavior-Consequence" (or A-B-C) chart with information provided in this case, what pattern(s) do you notice? How might this information help you in your assessment of this behavior (Table 1.3)?

Process

(Q3) What would be the intended outcome of the functional communication program for Erin? What might be your initial target? How might you proceed?
(Q4) *Thinking* further about the target behavior you selected, how might you measure this behavior? Who would be responsible for collecting these data? How often? In what setting or settings? Think about using different apps that are used for data collection, as listed on this Web site: http://www.positivelyautism.com/aba/mod4G.html

Table 1.2 A checklist to determine the social significance of program goals to consider when making goals for a learner (Carter, 2010)

Section 1 *Client values*	*Yes*	*No*	*Comments*
Is the goal of the program in line with the individuals' values and preferences?			
Does the individual and their caregiver agree with the outcomes that surround the program goal?			
Are there more goals the individual or their caregiver feel is important?			
Section 2 *Normalization*	*Yes*	*No*	*Comments*
Do the program outcomes increase chances for normalization?			
Are program goals age appropriate?			
Do program goals effect multiple areas of the individuals life?			
Do program goals generalize?			
Section 3 *Choice*	*Yes*	*No*	*Comments*
Do program goals encourage more occasions for the individual to make choices?			
Do program goals create opportunities for the individual to receive higher rates of reinforcement?			
Do program goals create opportunities for the individual to receive higher-quality reinforcement?			
Do program goals lessen the response effort required for the individual to meet reinforcement?			
Section 4 *Habilitative potential*	*Yes*	*No*	*Comments*
Will program goals teach new skills? • Skills necessary for long-term goals? • Social skills? • Life skills? • Vocational skills? • Leisure skills?			

(Q5) As a behavior consultant, your role is to synthesize information gathered surrounding observable behavior, construct an explanation as to why a challenging behavior may be occurring, and develop a behavior support program. In addition to the ABC data you have gathered, what additional types of information might important to gather? For each type of information you identify, explain why the information will be helpful, and how might you obtain it.

Table 1.3 Sample ABC chart with example behavior in each column that can work as a checklist for easier completion

Learner		**Instructor:**	
Date:		**Time:**	
Location/Setting:			
Antecedent ☐ Demand ☐ Transition ☐ Peer interaction ☐ Tangible removed ☐ Attention removed ☐ ☐ ☐ ☐ ☐ ☐	**Behavior** ☐ Hit ☐ Kick ☐ Scratch ☐ Pinch ☐ Bite ☐ Cry ☐ Yell ☐ Throw item ☐ Run ☐ Profanity ☐ ☐ ☐	**Consequence** ☐ Demand removed ☐ Demand reiterated ☐ Demand remain ☐ Verbal reprimand ☐ Non-seclusion timeout ☐ Seclusion timeout ☐ Blocking ☐ Ignore behavior ☐ Peer laugh, commentary, or other attention ☐ ☐ ☐	**Comments:**
Duration of Behavior	**(circle) :** <3 secs 5-15 sec 15-30 sec 30-60 sec	1-2 min 2 -5 min 5 -10 min over 10 min	over 30 min over 1 hour over 2 hours over 3 hours
Behavior Intensity:	low	medium	high

For each observation of a targeted behavior a new checklist would be completed

Practice

(Q6) In applied behavior analysis, the relationship between antecedents, behaviors, and consequences is referred to as "the three-term contingency." Educators and parents may rely on time-out as a consequence for behavior. However, time-out can sometimes be reinforcing given that the child is allowed to escape from the situation at hand. What is punishing about time-out? Looking at the ABC chart in Table 1.4, is the time-out reinforcing the behavior rather than punishing it as the teacher intended? How can you tell? Is the punishment working to reduce the behavior, as the time-out punishment procedure intended?

(Q7) It is not uncommon to observe different types of behaviors being displayed when Erin is with educators, parents, instructors, and peers. Looking once again at the ABC chart above in Table 1.4, what patterns do you notice? What might these patterns suggest about why certain behaviors are occurring with some people and not others?

Table 1.4 Analyze if the behavior below is being punished or reinforced by the time-out procedure the student's teachers are using

Antecedent	Behavior	Consequence
– Erin is driving car down car ramp at school – Peer joins in independently	– Erin grabs car out of peers hand and hits peer	– Teacher comes over – States "Erin, no hitting, go sit in time-out" – Teacher takes Erin by hand and brings her to the time-out chair, and gives her the car to play with
– Erin is playing the xylophone at school – Teacher brings peer over – Peer picks up tambourine and begins shaking it	– Erin places both hands on peer's chest and pushes	– Peer falls down – Teacher, "No, pushing!" – Takes Erin by hand and brings her to time out chair
– At home Erin is sitting on the couch making a stuffed elephant hop up and down – Her grandmother comes into the room, sits beside her, picks up a stuffed tiger and says, "watch this elephant! I can jump too!"	– Erin hits her grandmother on the knee with the elephant	– Grandmother says, "oh, if you hit me, then I do not want to play with you" – Erin stops and the grandmother leaves the room
– At school – Erin is coloring a picture at the table – Teacher walks over with peer – Peer sits down and begins coloring his own picture – Teacher walks away	– Erin gets up out of chair, walks over to peer, and pushes him out of his chair using both her hands	– Peer falls to the ground and shouts "Erin pushed me!" – Teacher walks over, says "Erin, there will be no pushing in this classroom. You need a time-out" – Takes Erin to time out chair and gives her a picture to color while she is there
– During morning circle time Erin is sitting next to peer – Class is singing, "ABC's" – Song ends and teacher hands each child a letter from the alphabet – Erin gets her letter ("E")	– Erin turns toward peer to her left, lifts her right hand up, and hits peer in the knee	– Peer says, "hey! that is mean!" – Teacher pauses circle time, takes Erin by the hand out of circle and to the time-out chair – Teacher resumes circle while Erin is in time-out

Reflection

(Q8) Have you been in a situation similar to the one above where an educator or parent was utilizing time-out?

- If so, did you find that it was working to punish the behavior (i.e., by reducing it) or to reinforce the behavior (i.e., by allowing the child to escape a situation or task)?

- If not, how would you respond to a situation if you believed that a parent or educator was unintentionally reinforcing a problematic behavior through the use of time-out, rather than reducing it?

(Q9) Considering that the behavior displayed by Erin involved physical injury and peers, how would you respond to the educators and other parents who want you to stop the behavior immediately, rather than take time to collect assessment data?
(Q10) When, if ever, is appropriate to begin an intervention before accumulating data? Explain your answer (Reference Ethics Box 1.1, Behavior Analyst Certification Board, 2014).

Ethics Box 1.1

Professional and Ethical Compliance Code for Behavior Analysts

- 1.04 Integrity.
  (d) The behavior analyst's behavior conforms to the legal and moral codes of the social and professional community of which the behavior analyst is a member.
- 2.09 Treatment/Intervention Efficacy.
  (d) Behavior analysts review and appraise the effects of any treatments about which they are aware that might impact the goals of the behavior-change program and their possible impact on the behavior-change program, to the extent possible.

Additional Web Links
Functional Assessment:
http://www.kipbs.org/new_kipbs/fsi/behavassess.html
Functional Communication Training:
http://csefel.vanderbilt.edu/briefs/wwb11.pdf
Early Intensive Intervention:
http://pediatrics.aappublications.org/content/early/2011/04/04/peds.2011-0426.full.pdf+html
ABC Analysis:
http://challengingbehavior.fmhi.usf.edu/explore/pbs/step3_antecedent_beh.htm
Time-Out:
http://csefel.vanderbilt.edu/briefs/wwb14.pdf

CASE: i-A3

"What is Cyrus trying to tell us?"
Setting: Clinic Age Group: Preschool

LEARNING OBJECTIVE:

- Examine the role of a behavior analyst within a multidisciplinary behavior assessment process.

TASK LIST LINKS:

- Experimental Design
  - (B-01) Use the dimensions of applied behavior analysis (Baer et al. 1968) to evaluate whether interventions are behavior analytic in nature.
- **Identification of the Problem**
  - (G-01) Review records and available data at the outset of the case.
  - (G-02) Consider biological/medical variables that may be affecting the client.
  - (G-04) Explain behavioral concepts using nontechnical language.
  - (G-05) Describe and explain behavior, including private events, in behavior-analytic (nonmentalistic) terms.
  - (G-06) Provide behavior-analytic services in collaboration with others who support and/or provide services to one's clients.
- **Assessment**
  - (I-04) Design and implement the full range of functional assessment procedures.

KEY TERMS:

- **Occupational Therapists**
  - Occupational therapists engage in the study of human occupations to manage adaptive behavior to perform these occupations. They enable persons to achieve optimal functioning, prevent occupational dysfunction, and promote optimal performance (Reed and Sanderson 1999).
- **Speech and Language Pathologists**
  - Speech and Language Pathologists are professionals that specialize in the assessment and management of communication disorders. Services can be delivered to individuals, families, and groups and often focus on areas such as speech sound production, voice, fluency, language comprehension and expression, cognition, feeding, and swallowing. Clinical services also typically include prevention and screening, assessment and evaluation, diagnosis, and treatment (American Speech-Language-Hearing Association 2007).

- **Sign Language**
  - American Sign Language is a visual/gestural language used by deaf individuals in North America. "Signs" are the equivalent of letters and words used in spoken language. Using a combination of hand shapes, facial expressions, and body gestures, individuals express words and ideas (Kelly and Gobber 2011).

What is Cyrus Trying To Tell Us?

Five-year-old Cyrus sat in the middle of the clinic's waiting room, both of his legs splayed out in a v-shape. Within the "vee" of his legs, he had piled a mound of toys extracted from a plastic bucket, each with some type of musical sound or song. Both of his parents sat close to him, watching carefully from either side of his small play area, perched on the edges of their respective chairs, clearly waiting, wondering, and watching.

The clinic's name—Community Care Clinic—was prominently displayed above the reception area. Cyrus and his parents had been through its doors before, for a number of fairly brief visits with the developmental pediatrician recommended by their family doctor. His mother thought back to the journey that had brought them to the clinic today.

Both their family doctor and the developmental pediatrician had expressed concern about Cyrus when his mother and father first brought him in with reports that "something was just not right" with his development. During Cyrus's third and fourth years, his family waited—for a long while—then took Cyrus in for observations and interviews, while answering a full battery of questionnaires themselves. It was a confusing and stressful time, but they had held high hopes: Everyone told them that just knowing what was going on with Cyrus would help. So they waited for some words, a name, a diagnosis—and finally it came. Close to his fourth birthday, the developmental pediatrician told Cyrus's parents that Cyrus had an intellectual disability (American Psychiatric Association 2013). He explained that this used to be what was called "mental retardation," he patted their hands, "I know you will be fine," he emphasized. "Cyrus is a very lucky boy to have you." He suggested that, on their way out, they should make an appointment with the receptionist to meet with what he described as "everybody," waving his hands in a circular manner. He stood up, shook their hands, and walked them to the door of the office, and wished them good luck in the future. "Be good," he told Cyrus, and patted him on the head, gently closing his office door.

Since that date about six months ago, Cyrus's parents had cycled through episodes of shock, dismay, and fear. They had read everything they could find, they talked to everyone, and they continued to teach Cyrus at home, encouraging him to speak—which hadn't happened yet—and teaching him some signs from the baby sign language book they had borrowed from the library. So far, he had figured out "cookie" and "more." Mostly, though, he communicated by pointing, screaming, shaking his head, and jumping up and down on his tippy toes, almost vibrating in anger.

Today, hoped Cyrus's mother, *maybe we can get some answers and some help. I have heard so many good things about this team of professionals here. I sure hope we aren't disappointed after this second long wait*. She continued to watch Cyrus, fully engaged with playing the songs and sounds of his toys, one-by-one, and placing them back in his plastic bucket, signing "more" and "cookie" at regular intervals. *Well*, she considered, *I guess they are going to see one of his problems first-hand when they call us into the room for our appointment. And ... here we go!*

The door to the waiting room opened, and a smiling, professionally dressed woman emerged. She walked over to Cyrus, and greeted him softly, then greeted both of Cyrus's parents with a handshake and a welcome. "Let's head down to our family room," she suggested. "Cyrus can bring his things and we have some toys in the room for him to play with while we talk." Agreeing, Cyrus's mother and father looked at one another with concern, and looked down at Cyrus. Cyrus's mother spoke gently to him, and Cyrus's father began to pack up his plastic bucket of musical toys. Immediately, Cyrus leapt to his feet, began to scream in a high-pitched tone, signed "more" and "cookie" and rose up and down on his toes, clearly very agitated. Fifteen long and tiring minutes later, Cyrus's parents were seated around a large, oval table in the family room, Cyrus was seated happily again with his toys, and three other adults who appeared to have a kind, friendly, and welcoming manner, were also seated at the table.

"So let's begin," said the woman who had helped them transition to the family room from the reception area. "I am Dr. Ovid Smith, a Board-Certified Behavior Analyst, and I am here today to see what we can do to support you and Cyrus. I thought we could start with introductions, explaining our roles, why we are here, and how we can help. Then together, we can set some goals and next steps for Cyrus. How does that sound?"

Visibly relaxing, Cyrus's father—quiet until now—responded, "That sounds great! I would love to hear what you have to say, first, before we add our ideas."

"Perfect! Well, as I said, I am Ovid, and my role as a behavior analyst is to figure out WHY Cyrus is having some challenging behaviors—like the ones we witnessed today—and to help decrease them using what we call a 'functional analysis'. I can help at home, daycare, and I can also help at school, when Cyrus moves on to a classroom environment."

"I am Raleigh DiCaprio, and I am what's called a **Speech-Language Pathologist**. I help to figure out how best to help Cyrus learn to communicate with everyone around him, teaching him what is called 'functional communication skills'. One example of this could be building on the **sign language** that he has already started to use."

"I am an **Occupational Therapist**, and—oh—my name is Emily Needham. I will look at Cyrus's skills of daily living, and I can also check out his fine and gross motor skills as well as any sensory issues he might have with the environment around him."

Dr. Smith continued the conversation: "As you can see, we all work together here in what we like to call an interdisciplinary team. We find that we can best help children

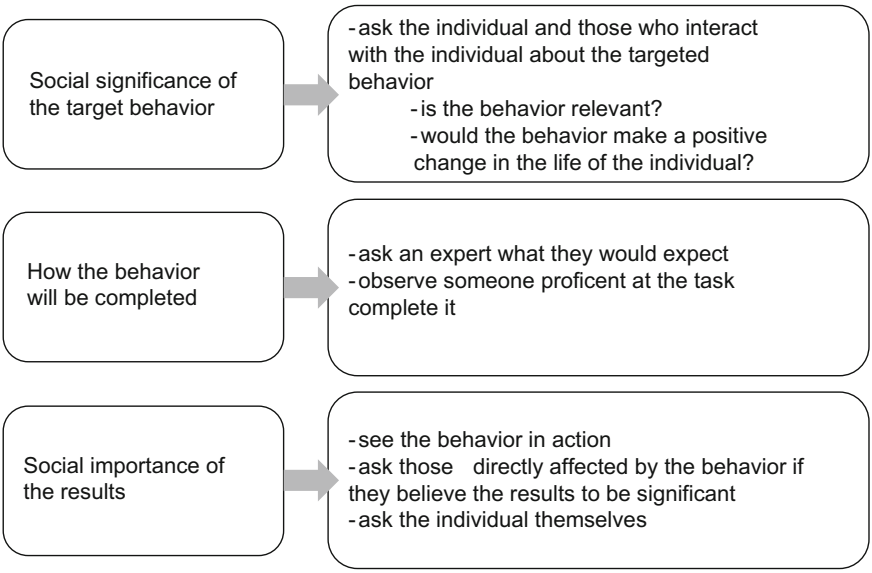

Fig. 1.3 How to determine the social validity of goals

and families when we all know what is going on with one another. And our ONLY reason for gathering together here is to support the three of you. So let's get started."

The Response: Principles, Processes, Practices, and Reflections

Principles

(Q1) How might you apply each of the defining characteristics of ABA outlined by Baer et al. (1968) to guide a behavior assessment process?
(Q2) Based on the information provided in this case, what might you identify as a priority target behavior? Please explain the social validity of your selected target behavior (Fig. 1.3).

Processes

(Q3) How might you operationally define your selected target behavior (Table 1.5)?
(Q4) Given the various disciplines involved in this case example, how might you, as the behavior analyst, lead and guide the development and implementation of a multidisciplinary assessment plan?
Here is a sample transition plan for a student with ASD from IBI to school and the inclusion of a multidisciplinary team (Fig. 1.4).
(Q5) Once the multidisciplinary assessment plan has been completed, how might you, as the behavior analyst, combine the outcomes attained from each professional involved into a single comprehensive formulation of why the problematic behavior may be occurring? What role might a functional behavior assessment play in this process?

Table 1.5 Considerations to include in an operational definition

The components of an operational definition	
1. Name the behavior (i.e., raising hand) 2. Topography of the behavior (a) Inclusions (either left or right hand raised above shoulder) (b) Exclusions (hand resting on table and elbow lifted over the shoulder) 3. What constitutes one incidence of the behavior	4. Includes only one behavior (if more than 1 behavior is included, it will have its own definition) 5. Cannot be further broken down 6. Does not include explanation or hypothesis as to why behavior occurs 7. Clear, complete, concise, unambiguous, and objective

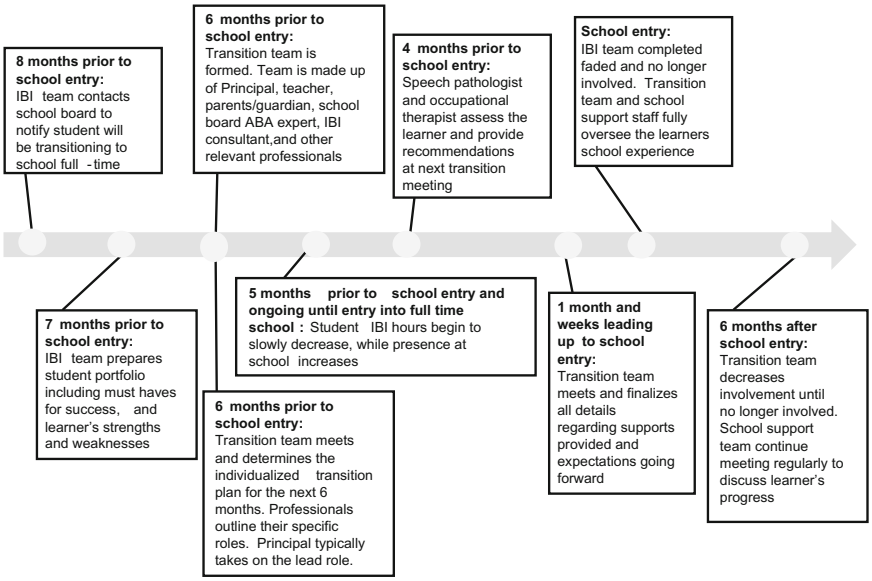

Fig. 1.4 Sample model and timeline for a multidisciplinary team when a child is transitioning from Intensive Behavior Intervention (IBI) to full-time school setting. *Source* Ontario Ministry of Children and Youth Services n.d.

Practices

(Q6) What are the benefits associated with a multidisciplinary assessment team? What are the limitations? What are some strategies you could use to overcome these limitations?

(Q7) How might you work together as part of a multidisciplinary team, despite possibly competing philosophical perspectives regarding why a behavior difficulty might be occurring?

Reflections

(Q8) How could you support Cyrus and his family to maintain an optimistic and hopeful view for the future, while recognizing the impact of Cyrus' intellectual disability? How could you incorporate strengths into her treatment plan?

Look at the following strengths checklist (Fig. 1.5).

	Never	Rarely	Some - times	Usually	Consis - tently
Learning					
The learner readily learns new skills in group teaching contexts					
The learner seeks help when s/he does not understand					
The learner can apply appropriate skills and knowledge even when situations are novel					
The learner will ask questions to clarify provided information					
The learner expresses interest by asking follow-up questions					
Self - Help					
The learner independently takes appropriate measures when s/he needs to go to the bathroom					
The learner cares for his or her belongings (e.g. remembers to bring backpack home from school, or brings pencil and notebook to class)					
The learner dresses and grooms his or herself appropriately (e.g. wears weather appropriate clothing)					
The learner expresses his or her feelings					
Does the learner prepare any meals for themselves? If so which ones:					
Is the learner able to navigate around their community? (i.e. can go to the corner store and get a snack)					
Problem Solving					
The learner shares relevant solutions to problems					
The learner identifies when a problem arises					
The learner asks for help when unable to solve a problem independently					
Can come up with creative solutions to unique problems /					
Creativity and Talents					
Learner expresses joy about activities from the past, or when currently engaged					
Plays sport(s). Which one(s):					
Artistic —circle: clay, paint, pencil, paper craft, construction, other:					
Interests and passions. List them:					
Learner recognizes when s/he has done something well					
Does the learner have any collections? If so what kind?					
Is the learner involved in any clubs or organizations? If so which one(s) and what is their role within it?					
Social Interactions					
The learner is able to carry a give and take conversation with a same aged peer					
The learner is able to join peers currently playing appropriately					
The learner can interrupt a conversation appropriately					
The learner is able to respond to WH questions					
The learner is able to ask WH questions					
The learner will approach peers during recess or lunch to instead of being alone					
Communication					
How does the learner primarily communicate? (circle) Verbally, sign language, PECS, augmented communication device, other: _____					
The learner responds to non-verbal communicative cues					
The learner uses non-verbal communication (e.g. s/he will point to an object s/he wants)					

Fig. 1.5 Excerpt of a strengths checklist that can be filled out by a parent or guardian and then used by professional when creating treatment goals for the learner (Able Differently, n.d.)

(Q9) What are the benefits and limitations of conducting an assessment in a clinical setting? How might you overcome these limitations?
(Q10) After the initial interdisciplinary meeting Cyrus' parents left feeling like a weight had been lifted. The team spoke to them using language they understood, while conveying professionalism and knowledge. The field of behavior analysis is filled with many terms, when speaking to families how can you ensure they comprehend what is being said and the plan going forward? In the case study above locate the behavioral jargon used and determine nonbehavioral replacement words that could be used in their place (Reference Ethics Box 1.2, Behavior Analyst Certification Board, 2014).

Ethics Box 1.2

Professional and Ethical Compliance Code for Behavior Analysts

- 1.05 Professional and Scientific Relationships.
  (a) Behavior analysts provide behavior-analytic services only in the context of a defined, professional, or scientific relationship or role.
  (b) When behavior analysts provide behavior-analytic services, they use language that is fully understandable to the recipient of those services while remaining conceptually systematic with the profession of behavior analysis. They provide appropriate information prior to service delivery about the nature of such services and appropriate information later about results and conclusions.
  (c) Where differences of age, gender, race, culture, ethnicity, national origin, religion, sexual orientation, disability, language, or socioeconomic status significantly affect behavior analysts' work concerning particular individuals or groups, behavior analysts obtain the training, experience, consultation, and/or supervision necessary to ensure the competence of their services, or they make appropriate referrals.
  (d) In their work-related activities, behavior analysts do not engage in discrimination against individuals or groups based on age, gender, race, culture, ethnicity, national origin, religion, sexual orientation, disability, language, socioeconomic status, or any basis proscribed by law.
  (e) Behavior analysts do not knowingly engage in behavior that is harassing or demeaning to persons with whom they interact in their work based on factors such as those persons' age, gender, race, culture, ethnicity, national origin, religion, sexual orientation, disability, language, or socioeconomic status, in accordance with law.
  (f) Behavior analysts recognize that their personal problems and conflicts may interfere with their effectiveness. Behavior analysts refrain from providing services when their personal circumstances may compromise delivering services to the best of their abilities.

Additional Web Links
Intellectual Disability:
http://aaidd.org/intellectual-disability/definition
Multidisciplinary Assessment:
http://www.selectivemutism.org/resources/library/Educational%20Planning%20IEP%20IDEA%20%20and%20504/Multidisciplinary%20Assessment-%20A%20Parents%20Guide.pdf/view?searchterm=assessment
Sign Language and ASD:
www.txautism.net/uploads/target/SignLanguage.pdf

CASE: i-A4

Why won't Serena just let me teach?
Setting: Classroom Age Group: School-Age

LEARNING OBJECTIVE:

- Apply applied behavior analysis assessment processes within an inclusive classroom setting.

TASK LIST LINKS:

- **Identification of the Problem**
  - (G-03) Conduct a preliminary assessment of the client in order to identify the referral problem.
  - (G-06) Provide behavior-analytic services in collaboration with others who support and/or provide services to one's clients.
  - (G-08) Identify and make environmental changes that reduce the need for behavior analysis services.
- **Measurement**
  - (H-01) Select a measurement system to obtain representative data given the dimensions of the behavior and the logistics of observing and recording.
- **Assessment**
  - (I-06) Make recommendations regarding behaviors that must be established, maintained, increased, or decreased.

KEY TERMS:

- **Classroom Management**
  - Classroom management typically refers to the techniques a teacher uses within a classroom setting to keep students on-task and displaying expected

behaviors, and to ensure academic activities are completed within the allotted time (Simonsen et al. 2008).

- **Habilitation**
  - Habilitation is the process of teaching new behaviors that increase access to shorter-term and longer-term reinforcers and reduce access to shorter-term and longer-term punishers (Cooper et al. 2007).
- **Paraprofessional**
  - A paraprofessional is an individual working in a classroom setting under the direction of a teacher to provide specialized support to students. Such individuals are not licensed to teach, but instead provide either individual or small group guidance to students within a classroom. Paraprofessionals will often work in partnership with teachers to support children with disabilities in inclusive classrooms (Giangreco 2003).
- **"Relevance of Behavior" Rule**
  - Many applied behavior Analysis (ABA)-based programs involve not only reducing problematic behavior, but also teaching new skills. The relevance of behavior rule is a guide when selecting a new skill to be taught. The rule is that only those behaviors that will continue to be reinforced after training in the natural setting should be selected because this will increase the likelihood that the new skill is maintained and generalized after the teaching program has ended (Ayllon and Azrin 1968; Alber and Heward 1996).

Why Won't Serena Just Let Me Teach?

Mr. Thiessen's grade one class is a soothing class. He takes great pains to continue the "natural look" that the Kindergarten class before him offered, that he learned about in depth in the months before graduation last year from his teacher education program. The lights are natural, and lamps are plugged in around the classroom but kept low. Brightly colored wall decorations cannot be found: The room follows the colors of the natural environment. Bulletin boards are covered with crinkly brown paper, floors are covered with snuggly area rugs soothing to the feet, and the door to the school's major hallway has a special mechanism that helps it to close slowly and softly. Transitions from activity to activity are signaled with familiar sounds, a gentle rain stick, or sometimes the unavoidable school buzzer amplified throughout the public address system. Although the school itself is mid-sized, with about 600 children filling its classes, the classroom itself is a joyously large, open rectangle with only 14 small students: a cause for celebration!

Even with the small numbers of children in the grade one class, Mr. Thiessen and his students are further supported by a **paraprofessional**—an experienced, energetic educator whom the students called "Mrs. Bee" for her favorite black-and-yellow-striped jacket she wears while on yard duty—who was assigned to the grade one class on a full-time basis this year due to the presence of many students with complex needs. In addition to students with social-emotional needs like frequent bouts of crying, physical needs like toilet training, and basic needs like healthy foods and weather-appropriate clothing, the grade one classroom included three students diagnosed with disabilities (quite unusual for the early years of school).

One particular student typically demands a high frequency and intensity of attention from both educators in the room: six-year-old Serena. *Her name*, Mr. Thiessen considered, *is quite the juxtaposition to her everyday behavior*. Serena had no "diagnosis" and wasn't considered to have a disability of any sort (yet), but she certainly is—in Mr. Thiessen's opinion—a high-needs child!

He thought back to yesterday …

Yesterday, Mr. Thiessen and "Mrs. Bee" started the morning by transitioning the students into the well-planned day by spreading out bins of math manipulatives across the classroom. They laid them on desks, carpets, and the tops of low bookshelves—anywhere that was not an individual student's desk or table. Immediately upon entering the room from the crisp fall morning from the classroom's private exterior door, Serena threw up her hands and screeched excitedly. She thumped down her colorful knapsack onto the wet floor, stomped her boots repeatedly in the dressing and undressing alcove, then threw her knitted hat and matching mittens in the general direction of her three-pronged hook, leaving them in a shallow puddle of collective drippings from a classroom full of outdoor clothing. Despite repeated requests by both educators to please "put away her things properly," Serena did not. Instead, she bounced her way over to the closest math bin and stretched out on top of the classroom's largest beanbag chairs, scrunching and wiggling until she was comfortable. Then—in a well-experienced way—she grabbed an adjacent beanbag chair and slung it over her lower back and upper legs, calling for Mrs. Bee to "make it good." This was Mrs. Bee's prompt to "fluff up" the beanbag until it was "just right" (according to Serena's needs). Mrs. Bee knew to go right away, or Serena would call her and call her in an increasingly high-pitched, demanding voice until she "finally" appeared. *It isn't worth making her wait*, insisted Mrs. Bee.

Fast-forward to the present "carpet time" where the grade one students gathered together for 15 min to plan the day ahead, sing and talk together, and complete some literacy exercises in a fun, interactive way, Mr. Thiessen was leading the class in a familiar song—one without actions, this time. While all the other student were seated, legs crossed, around the edge of the carpet, Serena hopped up boldly and

proceeded to wiggle her bottom to the beat of the song, eyes tightly closed, elbows out, and flapping. Naturally—like usual—the other students started giggling.

Even though we keep our carpet time to less than 15 min, reflected the teacher, *it's almost impossible to get through it without Serena getting everyone else off track. How frustrating*! *When she isn't disrupting EVERYONE, she is sure to be disrupting SOMEONE. Why won't she just let me teach? I may have to use* ***habilitation*** *as well as the curriculum itself to assist her to learn basic skills like sitting and attending, even for short periods of time to start. I remember from a presentation I attended that the* ***relevance of behavior rule*** *needed to be followed.* Although Mr. Thiessen would never voice these inner thoughts, it was difficult to keep them from recurring—especially when he was trying to drop off to sleep at night.

After what he felt was a debacle at carpet time, Mr. Thiessan had asked if "Mrs. Bee" would take Serena across the hall for some special attention time. Across the hall was an empty classroom that was not assigned to a specific class. Various staff members accessed it for a range of reasons, from a private area for parent–teacher interviews, to a meeting room, to reasons just like this one: for some flexible time and space on an as-needed basis.

"Mrs. Bee" and Serena worked together on the same lesson that was planned for the whole class. In this case, it was sorting out small items into labeled containers, placing them into the containers that represented the first letter of each item. Throughout the 15 minutes they were across the hall, Serena seemed completely immersed. For example, she put her tiny toy car in the "C" container, and her miniscule plastic ladybug into the "L" container.

Mr. Thiessan knew, however, that today's **classroom management** decisions were not going to please Serena's mother or father. While they lived in two separate households, they were solidly and collectively opposed to Serena being separated from her playmates in any way. In addition—like all parents—they want the best education for Serena and both repeatedly expressed that they felt the best education was the teacher and not the paraprofessional. Mr. Thiessen, "Mrs. Bee," their principal, and Serena's two parents had already had a few meetings about these issues. *But*, concluded Mr. Thiessen, *I still need to survive the day. Maybe we SHOULD think about calling in a behavior consultant, like the principal suggested. I know that they do more than dealing with problem behaviours, they do help with skill-building as well and there are definitely areas where Serena and a few others in the class could keep learning—like sitting at carpet time, like waiting for help, like putting their outdoor clothes on their indoor hooks. But I don't know if the parents would go for it. I think they believe that I am the problem, and not Serena. But maybe it's both.*

The Response: Principles, Processes, Practices, and Reflections

Principles

(Q1) How might the principle of habilitation and the relevance of behavior rule guide and inform your behavior assessment process? Please discuss each using examples from Serena's case.
(Q2) In Serena's situation, what type of data collection would you start with to understand the frequency of the behavior that is occurring throughout the day before you meet with the parents?

Processes

(Q3) Why is it important to include the professionals supporting the child experiencing the behavior difficulty in the assessment process? Considering Serena's case, how might you include the teacher in the assessment process? Please provide a rationale for your decision.
Students can also be involved in assessments and interventions. See the following website for additional information: http://www.parentcenterhub.org/repository/student-involvement/
(Q4) Please describe how you would approach both indirect and direct assessments of the problematic behavior and provide a rationale for your approach (Table 1.6).
(Q5) When meeting with Serena's parents, they will be looking to ensure that Serena is included with her peers, but she seems to do better and be more focused when she is one-on-one with the paraprofessional. What types of data and what support would you have prepared for the meeting with the parents to ensure a plan to support full inclusion? Would you start with full inclusion or partial inclusion?

Table 1.6 A guide to differentiating between and planning direct and indirect assessments with an individual

• First operationally define the behavior • Take into consideration setting events (medication, sleep, interruptions in schedule, variations in staff or peers in the environment, sleep, etc.)		
Type of assessment	Indirect assessments	Direct assessments
What it looks like	• Based on parent, support staff, individuals personal description of events and pattern • More subjective	• Based on observations of the individual • Can be in vivo or video recordings • More objective
How it is done	• Written questionnaire paired with verbal interview	• Observer takes data (for example, ABC chart or frequency count) simultaneously with their observation

Practices

(Q6) Insert the carpet time scenario outlined in this case above documenting the antecedents, behaviors, and consequences into Fig. 1.6. What hypothesis might you draft based on this analysis? Please explain how you reached this hypothesis and how you might further test this hypothesis (Table 1.7).

Student Name: _____ _____ _____

Behavior of Interest: _____

Operational definition of the behavior: Operationally define the behavior of interest ensuring to include information regarding what it looks like, and examples of the behavior that will not be included (if applicable)

_____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____

Are there any situations, people, times of day, etc. when the behavior con sistently does not occur? If so list them here:

_____ _____ _____

Known setting events (i.e. hunger, change in routine, medication change, noise level):

_____ _____ _____

Antecedents & Consequences

Immediate Antecedent	**Consequences**
_Seat task (non-preferred)	_Behavior unacknowledged
_Demand/request	_Verbal warning
_Transition from: _____ to _____	_Verbal redirection
_Unprepared (missing material)	_Non-verbal redirection
_Toy inaccessible	_Physical redirection
_Peer interaction	_Time-out (duration: _____ _____)
_Alone	(non-seclusion/seclusion)
_Other _____	_Privileges removed (type: _____ ____)
	_Blocking
	_Other _____

Hypothesis for the function (s) of the behavior:

_Escape from: _____

_Attention from : _____

_Gain tangible : _____

_Automatic Reinforcement (sensory stimulation): _____

Statement: When the learner _____
(antecedent)
and s/he engages in _____ it is in order to _____
(behavior of interest)
_____. The behavior is more likely to
(perceived function)
occur if _____.
(setting event)

Completed by: _____ _____

Date: _____

Revision date: _____

Fig. 1.6 Sample template for understanding the function of a behavior in a classroom (Barnhill 2005)

Table 1.7 An ABC chart for taking direct observational data

Antecedent	Behavior	Consequence

(Q7) Conducting a behavior assessment requires parental informed consent. What information needs to be included in an informed consent? Since Serena's parents are separated, do they both need to sign the informed consent or is one parent's consent satisfactory (Table 1.8) (Reference Ethics Box 1.3, Behavior Analyst Certification Board, 2014)?

Table 1.8 Informed consent checklist (Institute for applied behavior analysis, n.d.)

General topics
☐ Type of program and goals of the program
☐ Where intervention will take place
☐ Day and time of intervention
☐ Any different treatment methods that may be utilized
☐ Intrusiveness
☐ Estimate of how long the intervention will be necessary
☐ Levels of responsibility and roles of each individual involved
☐ Accessibility to records
☐ Phone numbers and contact information
☐ Freedom to participate and end the intervention
☐ Qualifications
Professional's obligations and responsibilities
☐ Confidentiality and limits of confidentiality
☐ Compliance with set appointments and session times
☐ Collection of data
☐ Writing reports
☐ Assessments—note assessments that may be used
☐ Development of intervention plan and necessary programs
☐ Train and model aspects of intervention and program
☐ Practice within area of competence
☐ Answer all questions regarding intervention, program, and interaction
☐ Obtain caregiver/guardian permission for all programs to be implemented
☐ Inform caregiver/guardian of all potential side effects
☐ Attend all meetings related to intervention, and program with other agencies
☐ Terminate upon request
☐ Upon request provide additional information and resources
Obligations of caregiver/guardian
☐ Provide input regarding program goals
☐ Be involved and participate in all aspects of program
☐ Comply with set appointments and sessions
☐ Active involvement in meetings
☐ Collect data
☐ Communicate openly regarding program, staff, and challenges

Ethics Box 1.3

Professional and Ethical Compliance Code for Behavior Analysts

- 2.04 Third-Party Involvement in Services.
  (a) When behavior analysts agree to provide services to a person or entity at the request of a third party, behavior analysts clarify, to the extent feasible and at the outset of the service, the nature of the relationship with each party and any potential conflicts. This clarification includes the role of the behavior analyst (such as therapist, organizational consultant, or expert witness), the probable uses of the services provided or the information obtained, and the fact that there may be limits to confidentiality.
  (b) If there is a foreseeable risk of behavior analysts being called upon to perform conflicting roles because of the involvement of a third party, behavior analysts clarify the nature and direction of their responsibilities, keep all parties appropriately informed as matters develop, and resolve the situation in accordance with the code.
  (c) When providing services to a minor or individual who is a member of a protected population at the request of a third party, behavior analysts ensure that the parent or client surrogate of the ultimate recipient of services is informed of the nature and scope of services to be provided, as well as their right to all service records and data.
  (d) Behavior analysts put the client's care above all others and, should the third party make requirements for services that are contradicted by the behavior analyst's recommendations, behavior analysts are obligated to resolve such conflicts in the best interest of the client. If said conflict cannot be resolved, that behavior analyst's services to the client may be discontinued following appropriate transition.

(Q8) If a behavior analyst were to come into the school to assess Serena's behavior, who would be able to access the records? Could the behavior analyst leave the records regarding Serena in the classroom filing cabinet? Explain your answers.

Reflections

(Q9) Conducting a behavior assessment requires parental informed consent. How might you respond if you were faced with a scenario where a child is experiencing behavior difficulties, the teacher is recommending a behavior assessment, but the parents are refusing to provide consent?
*see Ethics Box 1.3 above
(Q10) In addition to parental informed consent, it is important to include children in the consent process, and this is often called assent. Please explain how you would

involve Serena in aspects of the decision-making process? How could you verify that Serena understood the assent?

For a sample assent tutorial, see here:
http://www.irb.vt.edu/pages/assent.htm
Additional Web Links
Classroom Inclusion:
kc.vanderbilt.edu/kennedy_files/InclusioninClassroomTips.pdf
Inclusion and ASD:
http://www.asatonline.org/research-treatment/clinical-corner/inclusion/
A Resource Guide for Teachers:
https://www.bced.gov.bc.ca/specialed/sid/

CASE: i-A5 Guest Author: Monique Somma

Monique Somma: PhD Student, Brock University
Where did Siki learn to say that?
Setting: Community **Age Group: School Age**

LEARNING OBJECTIVE:

- Construct a behavior assessment process in a community setting.

TASK LIST LINKS:

- **Fundamental Elements of Behavior Change**
  - (D-11) Use mand training.
  - (D-13) Use intraverbal training.
  - (D-15) Identify punishers.
- **Specific Behavior-Change Procedures**
  - (E-04) Use contingency contracting (i.e., behavioral contracts).
- **Identification of the Problem**
  - (G-01) Review records and available data at the outset of the case.
- **Measurement**
  - (H-01) Select a measurement system to obtain representative data given the dimensions of the behavior and the logistics of observing and recording.
  - (H-02) Select a schedule of observation and recording periods.

KEY TERMS:

- **Differentiated instruction**
  - Differentiated instruction is an approach to teaching in which different students in the same classroom are provided with different types of learning opportunities based on areas such as students' interests, readiness, and preferences (Levy 2008).
- **Full Inclusion**
  - Full inclusion is a variation of inclusion in which students with exceptionalities are placed full time in an inclusive classroom with their same-age peers. Within this context, emphasis is often placed on teaching social skills to children with exceptionalities in order to foster successful interactions and relationships with their nondisabled peers (Fuchs and Fuchs 1998).
- **Inclusive classroom**
  - An inclusive classroom is an approach to special education in which students with exceptionalities spend most of their time in the same classroom, and engaged in the same activities, as their same-age peers. This contrasts with a segregated classroom in which children with exceptionalities are placed in a classroom separate from their same-age peers without disabilities, and spend most of their time in this specialized classroom interacting with other children with exceptionalities (Florian 2008).
- **Intraverbal**
  - Intraverbals are "verbal operants characterized by the emission of a verbal response after the presentation of a verbal stimulus that shows no point-to-point correspondence with the response" (Belloso-Díazn and Pérez-González 2015, p. 749).
- **Mand**
  - A mand is "a verbal operant in which the response is reinforced by a characteristic consequence and is therefore under the functional control of relevant conditions of deprivation or aversive stimulation" (Skinner 1957, pp. 35–36).

Where Did Siki Learn to Say That?

"Hey butt-face!" The cry out is heard over the busy rustling and talking during the typical dinner rush at the local pizza joint.

"Siki! Stop that!" Mrs. Adams whispered with vehemence, and she felt her ears and neck growing hot, red, and blotchy.

"Butt-face! Butt-face!" Matteo and Teal piped in while giggling loudly. "That's it! No TV or video games, that includes your iPad, Siki, when we get home!" snapped Mrs. Adam who was barely holding it together and completely unable to swallow the food that was now stuck in the back of her throat. Her eyes welled up with tears and she gazed away from the table, noticing several patrons awkwardly look away to avoid her gaze. This was the final straw of the evening, for her, as Siki had cursed at least seven other times prior in the past 45 min. Mr. Adam knew without asking what his wife was feeling, and rubbed her back with sympathy, glancing at his three children as they munched their pizza as if their mother had not just taken away their favorite leisure activities. He felt fortunate to have three healthy, beautiful children, Matteo and Teal who were four and five years old, respectively, and Siki, the 9-year-old apple of his eye since the day she was born.

Mr. Adam, now lost in his thoughts, remembered that ever since Siki was a small child, he knew that she was not quite like the other kids around her. She had always preferred to play her own games, which she often perseverated on for long periods of time. These games had never made much sense to him, but Mrs. Adams had repeatedly assured him that she was "just being creative." Having two younger brothers, though, had allowed her to expand on her interactions with other children as they constantly seek her out to play with them, he thought. Life at home has been pretty good for his three young children and Siki has really grown socially as a result of having the boys around. At school, this year especially, she had been more successful in the **inclusive** grade 4 classroom. *There have been fewer calls home about Siki being frustrated and upset and most days she has received a happy face in her agenda*, he thought.

Although Siki sees Dr. Remanuski, her pediatrician, regularly, Mr. and Mrs. Adams have not wished to move forward with further testing as far as obtaining a diagnosis for Siki. But some things were definitely unusual: both past and present. At the age of four, for example, Siki had already started reading most children's books and had usually been able to exceed the academic expectations in class as long as she was interested in the topic. As far as Mr. and Mrs. Adam were concerned, Siki interacts better with adults as a result of her being an only child for four years and her not being in any structured, or social programs until she went to Junior Kindergarten. For the first two months of school, Siki cried off and on for much of the morning. When directed to play in the Discovery Centre, she would often throw toys and materials such as pencils, erasers, and small pebbles. At one point, the school personnel had encouraged the Adams to look into sending Siki to a specialized program, but Mrs. Adam was very persistent and she worked diligently with the teachers to keep Siki in an inclusive setting. Once the teachers had figured out that Siki was most content when in the classroom library reading stories out loud to herself or lining them up in a particular order on the carpet, Siki was permitted to choose this for a discovery time activity. The crying and throwing subsided tremendously and Siki seemed much happier in Kindergarten.

As Siki progressed through the early elementary grades, formal and informal meetings at the school urged the Adams to consider further testing in order for Siki

to receive some additional supports and programs. Although the teachers, principal, and school psychologist had recommended further assessment more frequently as time passed, her parents continued to feel that although it takes Siki and the teacher a couple of months to get to know one other, and it is the school and classroom teacher's job to figure out what works. They have never believed that any diagnosis would ever help the teacher and Siki to get to know each other better. With a lot of strength and advocacy, they have been reasonably happy with the school, which has a strong focus on **full inclusion** and **differentiated instruction**.

Lately though, as Siki has been displaying more inappropriate behavior, especially cursing when out with her family, Mr. and Mrs. Adam have begun to reluctantly discuss revisiting the idea of further testing with Dr. Remanuski.

"It seems as though in the past year or so, we cannot go anywhere without at least one episode of Siki shouting out swear words. Whenever we are out, like the grocery store or a restaurant, she seems to just blurt out profanity for no apparent reason. Lately, the boys have been copying whatever Siki says, shouting it out and laughing because they know the words are making us angry. Have you noticed this?" Mrs. Adams continued to whisper at her spouse.

In general, the Adams were puzzled as to where Siki had learned the inappropriate language, and why she thinks it is okay to shout out in public. Neither of them uses profanity (at least when the children are around) and Mrs. Adam is very strict with the television programs that the children are permitted to watch. They even closely monitored Siki's use of the Internet, her online interactions, and the games she plays on the iPad. Siki had actually been grounded from the iPad a lot lately since this seemed to be the best **punishment** when she showed this type of disruptive behavior. Although recently, it seemed that Siki had little care for this **consequence**, as she continued to use profanity on a regular basis, often daily. Even when she was grounded from the iPad, she continued to swear in public.

At home the swearing had been more tolerable; however, the boys were really picking up a lot of inappropriate language because of it. Matteo's daycare teacher actually mentioned that the other day he had called another child "Butt-face!" when they were fighting over a toy truck.

When Mrs. Adam spoke to Siki's teacher, Miss Pri, last week, she asked if Siki had been using foul language at school. Miss Pri replied that she has not heard Siki use profanity of any kind in the classroom or when she has been outside on yard duty. She assured Mrs. Adam that she would let the other teachers who interact with Siki know so that they could be aware in case there was an incident at school. They had a behavior contract in place from the previous years that had broad expectations, but Mrs. Adams said she rarely had to reference it. Although Mrs. Adam was reassured by Siki's behavior at school, she still felt very discouraged as to the reason for her newest and ever-increasing behavior issues outside of school. She had also felt silly for asking Miss Pri because in hindsight of course the teacher would have contacted her or written in Siki's agenda if there was a problem at school.

"Let's go, ploppy turd-faces!" Siki shouted as she jumped up from the table and began to put her jacket on. Mr. Adam's thoughts were interrupted as he was reminded of the challenges they face as a family when doing simple things like going out shopping or to a restaurant which was something the Adams did as a way of spending "family time" together.

Mr. Adam piped in as he stood and gestured for her to sit down. "Just a minute Siki. We still have to pay the bill." At that moment the waiter appeared with the check and waited somewhat impatiently as Mr. Adam fumbled to retrieve the cash from his wallet. He felt relieved to finally be leaving the restaurant. "Bye, butt-face, poo-brain!" could be heard trailing out of the restaurant along with the echo and giggles of the two young boys on the way to the car.

Although the ride home was less than three minutes, it felt like an eternity. Mrs. Adam was nearly in tears, which she had been holding in for the latter half of the evening. The only words uttered were by Mr. Adams, who, upon arrival at home, directed all three children to go upstairs and prepare themselves for bed, and he would be up shortly to tuck them in. The boys whispered to each other and Siki expressed her discontentment with an "Ugh, it's not fair!" and crossed her arms with a pout.

A few hours later, as Mr. and Mrs. Adam settled into bed, they discussed the events of that evening, which seem to be the norm lately. "I feel as though people are judging us as parents. I know they are staring!" Mrs. Adam sobbed—even though she thought she was done with tears for the evening. "Now the boys are also giggling and repeating these swear words all the time as though it were a funny joke."

Mr. Adams dared not tell her about what the childcare educator had said to him the other day. It seemed as though he remembered less and less what it felt like to be relaxed going out in public, and more and more feeling stressed about the unknowns. What will Siki do? How will she act? What will she say this time?

Mrs. Adam commented that she felt like it was a circus whenever they go out, except they are the main act. Mr. Adam emphasized that ordering in and eating at home would be a better option from now on. Moving forward with an assessment for Siki seemed to be the only next logical step, to seek out some answers that would calm the roiling sea of emotional turbulence where they were precariously balanced.

The Response: Principles, Processes, Practices, and Reflections

Principles

(Q1) Based on the information provided in this case study, what consequences are increasing Siki's behavior and which are decreasing it?
(Q2) How might you describe Siki's behavior topographically? How might you describe it by function? What are the benefits and limitations associated with each of these methods of describing behavior?

Processes

(Q3) Based on the information provided in this case study, indicate the antecedents and consequences that might be surrounding Siki's problematic verbal behavior.

What patterns emerge? Based on these patterns, hypothesize why these problematic behaviors might be occurring (Fig. 1.6).
(Q4) What would be your first step to determine why the behavior may be occurring with Siki's family and not at school? Based on the information in the case, what is your initial hypothesis on why this is occurring?

Practices

(Q5) How could you approach the assessment of Siki's problematic behavior across multiple settings such as home, community, and school? Which parties would need to give consent? In what manner would you explain the results of the assessment to, and to whom (Reference Ethics Box 1.4, Behavior Analyst Certification Board, 2014)?

Ethics Box 1.4

Professional and Ethical Compliance Code for Behavior Analysts

- 2.03 Consultation.
  (a) Behavior analysts arrange for appropriate consultations and referrals based principally on the best interests of their clients, with appropriate consent, and subject to other relevant considerations, including applicable law and contractual obligations.
  (b) When indicated and professionally appropriate, behavior analysts cooperate with other professionals, in a manner that is consistent with the philosophical assumptions and principles of behavior analysis, in order to effectively and appropriately serve their clients.
- 3.04 Explaining Assessment Results.
  Behavior analysts explain assessment results using language and graphic displays of data that are reasonably understandable to the client.
- 3.05 Consent-Client Records.
  Behavior analysts obtain the written consent of the client before obtaining or disclosing client records from or to other sources, for assessment purposes.

(Q6) Which dimension would you use to collect behavior in the assessment observation (Fig. 1.7)?
(Q7) Mrs. Adams directly mentions that Siki may not use the iPad when they get home from dinner. What is a behavior contract and how could the Adams family potentially utilize this with Siki and her iPad?

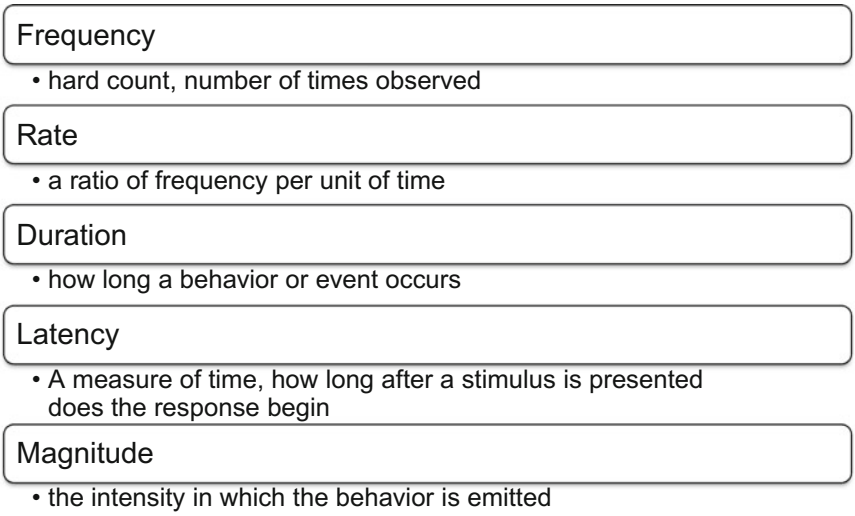

Fig. 1.7 Dimensions of behavior

Reflections

(Q8) *Thinking* not just about reducing the immediate frequency of Siki's problematic behaviors, but rather about longer-term behavioral improvements, how might you balance a focus on the specific presenting behavior difficulties and the quality of life for Siki's family?
(Q9) As a behavior analyst you are responsible to everyone who is affected by the services being offered. What implications could be present for Siki's siblings if you were brought into the home to assess Siki's behavior (Reference Ethics Box 1.5, Behavior Analyst Certification Board, 2014)?

Ethics Box 1.5

Professional and Ethical Compliance Code for Behavior Analysts

- 2.02 Responsibility.
  The behavior analyst's responsibility is to all parties affected by behavioral services. When multiple parties are involved and could be defined as a client, a hierarchy of parties must be established and communicated from the outset of the defined relationship. Behavior analysts identify and communicate who the primary ultimate beneficiary of services is in any given situation and advocates for his or her best interests.

(Q10) Consider the stigmas that can often come with labels and diagnoses, why may Siki's parents be reluctant to engage in an assessment with professionals?

See this article for examples of difficulties with labeling children:
http://smhp.psych.ucla.edu/pdfdocs/diaglabel.pdf
Additional Web Links
Verbal Behavior:
www.txautism.net/uploads/target/VerbalBehavior.pdf
Speech and Language Development:
http://www.asha.org/public/speech/development/
The Analysis of Verbal Behavior:
https://www.abainternational.org/journals/the-analysis-of-verbal-behavior.aspx

References

Able Differently. (n.d.). *Child strengths checklist.* Retrieved from http://able-differently.org/wp-content/uploads/2012/01/Strengths-Assessment-Child.pdf

Alber, S. R., & Heward, W. L. (1996). "GOTCHA!" Twenty-five behavior traps guaranteed to extend your students' academic and social skills. *Intervention in School and Clinic, 31*, 285–289.

American Psychiatric Association. (2013). *Intellectual disability fact sheet*. Retrieved from http://www.dsm5.org/documents/intellectual%20disability%20fact%20sheet.pdf

American Speech-Language-Hearing Association. (2007). *Scope of practice in speech-language pathology*. Retrieved from http://www.asha.org/policy/SP2007-00283.htm

Ayllon, T., & Azrin, N. H. (1968). *The token economy: A motivational system for therapy and rehabilitation*. New York: Appleton-Century-Crofts.

Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*(1), 91–97.

Baer, D. M., Wolf, M. M., & Risley, T. R. (1987). Some still current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 20*(4), 313–327.

Behavior Analyst Certification Board (2014). *Professional and ethical compliance code for behavior analysts.* Retrieved from http://bacb.com/wp-content/uploads/2016/01/160120-compliance-code-english.pdf

Barnhill, G. P. (2005). Functional behavioral assessment in schools. *Intervention in School and Clinic, 40*(3), 131–143.

Belloso-Díaz, C., & Pérez-González, L. (2015). Effect of learning tacts or tacts and intraverbals on the emergence of intraverbals about verbal categorization. *Psychological Record, 65*(4), 749–760. doi:10.1007/s40732-015-0145-0.

Bicard, S. C., Bicard, D. F., & the IRIS Center. (2012). *Measuring behavior*. Retrieved on from http://iris.peabody.vanderbilt.edu/wp-content/uploads/pdf_case_studies/ics_measbeh.pdf

Bosch, S., & Fuqua, R. (2001). Behavioral cusps: A model for selecting target behaviors. *Journal of Applied Behavior Analysis, 34*(1), 123–125.

Carter, S. (2010). *The social validity manual: A guide to subjective evaluation of behavior interventions*. London: Academic Press.

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Pearson.

Dutton, L. (2011). Functional communication and special education: Giving a voice to those who can't speak. *Southeast Education Network, 16*(1). Retrieved from http://seenmagazine.us/articles/article-detail/articleid/1660/functional-communication-and-special-education.aspx

Edmunds, J., Kendal, P., Ringle, V., Read, K., Brodman, D., Pimentel, S., et al. (2013). An examination of behavioral rehearsal during consultation as a predictor of training outcomes. *Administration and Policy In Mental Health, 40*(6), 456–466.

Escambia County School District. (n.d.). *ABC checklist—version 2*. Retrieved from http://www.escambia.k12.fl.us/pbis/fbadata/

Florian, L. (2008). Inclusion: Special or inclusive education: Future trends. *British Journal of Special Education, 35*(4), 202–208.

Fuchs, D., & Fuchs, L. (1998). Competing visions for education students with disabilities: Inclusion versus full inclusion. *Childhood Education, 74*(5), 80–81.

Giangreco, M. (2003). Working with paraprofessionals. *Educational Leadership*, *61*(2), 50–53.

Health Canada. (2013). *A young child's assessment and diagnosis*. Retrieved from http://www.gov.mb.ca/fs/imd/young_child_assess.html

Horner, R., Carr, E., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71*(2), 165–179.

Howard, J., Sparkman, C., Cohen, H., Green, G., & Stanislaw, H. (2005). A comparison of intensive behavior analytic and eclectic treatments for young children with autism. *Research in Developmental Disabilities, 26*(4), 359–383.

Institute for Applied Behavior Analysis. (n.d.). *Informed consent checklist*. Retrieved from http://iaba.com/downloads/Forms_and_Procedures_Manual/tab04.pdf

Kelly, R., & Gobber, B. (2011). *Toward a more flexible, believable model of the human hand for American Sign Language*. Retrieved from http://socrs.cdm.depaul.edu/2011/program/SOCRS-11.pdf#page=87

Levy, H. (2008). Meeting the needs of all students through differentiated instruction: Helping every child reach and exceed standards. *The Clearing House: A Journal of Educational Strategies, Issues, and Ideas, 81*(4), 161–164.

Ontario Ministry of Children and Youth Services. (n.d.). *Transition team model.* Retrieved from http://www.autismontario.com/client/aso/ao.nsf/0/15006C97042D3DDD8525756D00683967/$FILE/Supporting%20Seamless%20Transitions%20Appendix%20A.%20Connections%20for%20Students.pdf?openelement

O'Neill, R., Horner, R., Albin, R., Sprague, J., Storey, K., & Newton, J. (1997). *Functional assessment for problem behavior: A practical handbook* (2nd ed.). Pacific Grove, CA: Brooks/Cole.

Reed, K. L., & Sanderson, S. N. (1999). *Concepts of occupational therapy*. Baltimore, MA: Lippincott Williams & Wilkins.

Simonsen, B., Fairbanks, S., Briesch, A., Myers, D., & Sugai, G. (2008). Evidence-based practices in classroom management: Considerations for research to practice. *Education and Treatment of Children, 31*(3), 351–380.

Skinner, B. F. (1957). *Verbal behavior*. New York, NY: Appleton- Century-Crofts.