Braden on Behavior

Behavior Modification in the Classroom

(Editor's note: This is the first of a four-part series addressing the subject of managing behavior in children with fragile X syndrome by longtime NFXF contributor Marcia Braden, PhD. Subsequent articles will address behavior at home, in social settings, and in the wider community. Contact: info@marciabraden.com)

During a recent school consultation, I was reminded of how the behavior of students with fragile X syndrome is often misunderstood in the classroom. Watching a student with FXS struggle is difficult when his behavior is affected by those characteristics that make up the Fragile X phenotype. (See chart below.) The fact that sensory input is difficult for him to interpret or that his speech production is cluttered and hard to understand or that his learning style is counter to the way teaching is traditionally conveyed may be the very reasons he is acting out or refusing to participate.

An example most parents and professionals familiar with FXS would recognize: The loud and unpredictable sound of the music class next door to our student's classroom causes him to become hyper-aroused, scanning the room waiting for the next sound to be made. After a while, he covers his ears, puts his head down on the desk and screams, unable to manage his anxiety any other way.

Obviously, the student's level of affectedness dictates just how much he can tolerate in his learning environment. His inability to tolerate certain input may result in challenging behaviors. But modifying his classroom behavior requires an understanding of the cause or function the behavior serves. Attempting to reduce the frequency of the behavior without considering its function is an exercise in futility.

In other words, in order to change or modify the behavior, we must understand why it occurs. When we understand, we can be more successful in helping the student with FXS become more adaptable and less disruptive in the classroom.

The idea of modifying behavior is not new. Now referred to as "Applied Behavior Analysis," it simply refers to a variety of strategies to increase or decrease the frequency of certain behaviors believed to enhance or interfere with learning. Many school systems use this term when discussing the treatment of problem behavior with parents. When necessary, a behavior intervention plan (BIP) is written as part of the student's Individual Education Plan (IEP). This plan includes a variety of strategies and supports to assist the student in "modifying" his behavior.

A few words of warning regarding BIPs: When rigid behavior analysis is applied without consideration for characteristics that are part of the FXS phenotype, the plan can be ineffective. In other words, pinpointing the function of the behavior is essential to effective behavior modification. But when the behavior is analyzed in isolation from the FXS phenotype, it may fit the behavioral model (determine the function and apply an intervention), but miss the mark in providing successful intervention.

The following example illustrates the difficulty of applying behavior analysis without considering the FX phenotype. A student with FXS is asked to write his name in class, but he throws the marker and tears up the paper. At first glance, the function of this behavior seems to be a willful attempt to escape or avoid the demands of the task. A behavior intervention plan might employ strategies to support the student to persevere through the task by offering substantial reinforcement such as a desired snack or free time. That's a traditional behavior modification approach, and it works with most children in most settings (with most adults, too, for that matter, though different rewards may apply).

However: This approach misses the point because the escape behavior of the student with FXS may not be willful but merely a reaction to what he experiences as overwhelming anxiety in having to write his name. Many students with FXS have motor planning and executive functioning deficits as well as fine motor delays, making writing extremely difficult. The anxiety and discomfort created by the writing task create a fight-or-flight reaction.

In this example, it is important to go beyond the typical identified function of escape or avoidance, and instead focus on determining the more relevant issue: From what is he trying to escape? When we realize what that is, we know that instead of providing motivation to have the student continue the task, it would be more effective to provide an alternative strategy for him to comply with it. Possible alternatives would be for him to use a stamp to write his name, or to spell it with letter tiles. This might eliminate his need to escape from the writing task.

Ultimately, the request to write would no longer elicit such a negative behavioral response. The student would learn that the expectation was no longer insurmountable and through repeated exposure and appropriate supports such as tracing, writing on a white board with a marker or using a keyboard, he would be more willing to attempt to write. This is the essence of behavior modification.

In another example, a student with FXS becomes anxious whenever a fellow student screams. The screaming is unpredictable and loud. The student with FXS reacts to the discomfort by hitting himself. The behavior is aggressive and could present a significant

risk to his welfare. This self-injurious behavior is not premeditated but rather, a reaction fueled by his anxiety. As the analysis is completed, it becomes clear that the only time this behavior occurs is when the other student is present. The mere anticipation of that student's screaming causes the student with FXS to become hyper-aroused and dysregulated.

How to handle this situation? The intervention might include graduated desensitization to the other student who screams. This might be accomplished by allowing the student with FXS to move away from the screaming, to wear headsets to muffle the sound or to leave the classroom to complete a contrived task. This process, however, might be so uncomfortable that the student with FXS continues to hit himself anytime he is in the presence of the other student. In this case, the success of the intervention is contingent on regulating the behavior, not spending time desensitizing him to the screaming by repeated incremental exposure.

Psychologists often use the ABC (Antecedent-Behavior-Consequence) model when analyzing behavior. The consequence actually becomes the intervention. Correct application of the model can mean the difference between successful and unsuccessful intervention. "Antecedent" means whatever was occurring just prior to the negative behavior. When we account for the FXS behavioral phenotype in analyzing the antecedent, the intervention (consequence) will be appropriate and successful. The chart below illustrates the ABC chart with the two different consequences/interventions.

Implementation of the A-B-C Model Without An Understanding of FX Behavioral Phenotype

Antecedent	*Behavior*	*Consequence/Intervention*
Writing Task	Tearing paper and throwing marker	Reinforce the student for every minute he perseveres through the task

Implementation of the A-B-C Model With Understanding of the FX Behavioral Phenotype

Antecedent	*Behavior*	*Consequence/Intervention*
Writing Task	Tearing paper and throwing marker	Offer alternative writing task, give opportunity to take a sensory break, provide letter stamps, use "backward chaining"*

* Backward chaining is a technique that breaks down a task into its sequential steps, with the adult initially doing all but the very last one. When the student is ready, the adult does all but the last two, and so on, until the student has accomplished each step on the "backward chain" and arrives at the beginning step.

The classroom is a place to learn a variety of behaviors. The student with FXS may need to learn to relate socially, complete academic tasks, demonstrate better speech production or tolerate certain sensory input without demonstrating challenging behaviors. When the intervention does not include an understanding of the behavioral phenotype, but rather requires behavior that is incompatible with what is possible, the intervention will fail. When the intervention fails, teachers and peers may come to view the student as less viable in the classroom, and the situation may needlessly deteriorate.

It is the responsibility of the educators and clinicians to observe the challenging behavior, analyze it, and decide on its function, based on a clear understanding of the characteristics that comprise the behavioral phenotype. This will ensure sound behavioral programming and successful behavior modification.

Characteristics of FXS Behavioral Phenotype

- Cognitive deficits
- Sensory integration dysfunction
- Speech and language delays
- Gross and fine motor delays
- Physical ailments
- Social/psychological deficits
- ADHD, anxiety, depression

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By Marcia Braden, PhD

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The first article in this series discussed how difficult it is to apply stringent behavioral strategies to reduce problem behaviors in the classroom. The key is to understand that behavior doesn't occur in a vacuum. What happens *before* a problem behavior (its "antecedents") dictates to a great degree what that behavior will be. When a teacher learns what the triggers are for any given child, he or she can tailor, to the degree possible, an appropriate intervention or prevention strategy. That in turn allows for more success in the overall plan.

This classroom approach is not much different in general than what parents or other authority figures in the community must do to help shape behavior in positive directions. But specific circumstances vary greatly from classroom to home to community. This article goes beyond the school environment and examines managing behavior in the community.

It is obvious that the challenge is greater in the community because the environment is much larger and more difficult to predict. The many different community settings and stimuli make it more problematic for parents and the children themselves to navigate behavioral obstacles.

Public feedback to parents about their child's challenging behavior can even come to include accusations of abuse, neglect or at least poor parenting. Taking a child into a public community environment can thus be daunting and in some ways, holds a parent hostage. Sometimes parents refrain from including their child because the child's behavior has the potential to pose a safety hazard.

Avoidance Is Not a Solution

Sadly, the obvious—or at least easiest—remedy to avoid discomfort and potential humiliation is to exclude the child from community-based activities. In order to do this, one parent or a sibling must stay home or provide an alternative activity that is easier to negotiate. This method of managing the situation, although understandable, is sorely lacking because the child misses opportunities to modify or learn new behaviors that can make him more functional in community settings.

That said, it is very difficult for parents to endure the challenge, especially if past experiences have been difficult or were so traumatic that neither the child nor the parent wants to get anywhere near a similar circumstance.

With behavior magnified in large, complex community settings, identifying the antecedents can be more challenging than it is in the relatively more controlled setting of a classroom or home. Antecedents might include multiple and different noises, events, people, and varying locations that include serial transitions, to name just a few.

The fragile X syndrome behavioral phenotype includes an attention-deficit/hyperactivity disorder in about 80 percent of people affected by the condition. This issue complicates the predictability of behavior because the environment is loaded with unforeseen events that can easily lead to behavioral outbursts. The following example was presented to me in my practice several weeks ago. The antecedent was not apparent for reasons I discuss below.

The Situation: Antecedent Confusion

The parent of a child with FXS wanted to take her child to get a haircut. The problem was that the hairdresser had previously worked out of her home (a much smaller and predictable environment), but moved her business to a busy strip mall. Because the child knew the hairdresser and was comfortable with her, the mother felt it was important to continue with her despite the move. They had gone through the process of desensitizing the child's head to touch, to the noise and vibration of shears, and to washing his hair in a big sink with a hose rinse. Anyone who is around children with FXS knows what accomplishments these are!

In the mother's mind, the major challenge was going to be having her son navigate a busy parking lot with many distractions. What she didn't foresee was that the mere change in the customary route to the hairdresser's caused her son so much anxiety that they never even made it to the parking lot. It was not until she analyzed what caused her son's outburst in the car that she realized she had focused on the wrong stimuli.

The son's behavior in this situation related to another hallmark of the phenotype—anxiety. Her child became obsessive and compulsive about the route and direction they were taking because he expected his parent to go to the hairdresser's home. His expectation had not been met, and because the environment was unfamiliar, his anxiety was mounting, eventually becoming the catalyst for a fight-or-flight reaction.

Even though the mother had been aware of how changes in routine— in this case the route to the hairdresser—could contribute to problematic behavior, she was so overwhelmed with the thought of taking him into a busy and dangerous parking lot that she did not properly prepare him for the change. When children with FXS find the ability to self-regulate their behavior challenged in this way, aggressive and self-injurious behaviors may occur.

Keep It Simple With Task Analysis

Making behavioral changes in the community environment is complicated and requires an understanding of both the phenotype and antecedents. Earning tokens or stars on a chart may not be enough to encourage compliance. Denying access to an event or activity as a way to induce cooperation usually won't work because it reinforces the very thing the child is trying to accomplish—escaping the anxiety that has built up around participation, no matter how much she may ultimately enjoy it.

Clearly, the problem behavior in the case cited here resulted from changing routes to go see the hairdresser. I discussed this with the mother in detail, carefully probing her experience. In order to make the task of managing her son in this situation less wieldy, it was important to reduce the complexity of the overall target and focus simply on introducing him to the new route and what was, in essence, an entirely new environment. This process is called "task analyzing." Simply put, the task (or string of tasks) is broken down into small pieces so that the child can succeed and the parent is not so overwhelmed.

We decided that in order to desensitize the child from the reaction to the first failed encounter, it was necessary for us to change the route and give him a fresh start. Luckily, one of her son's favorite food chains was in the same strip mall. While the mother had originally thought the restaurant would be a major distraction for him once they entered the parking lot, she had not considered using it as a positive vehicle to introduce him to the hairdresser's new location. This time the plan was to drive into the parking lot to get her son a snack. He expected this and was familiar with the route. The next step was to nonchalantly mention to her husband on the phone (this is called a "side dialogue") that Sherry had moved her shop to the strip mall where the food chain was located. She handled it as if it was new information and simply a coincidence.

By the way, if the husband had not been available, a "contrived" call would also have sufficed. The important point is that the "conversation" was overheard indirectly and her son actually pointed to the sign that had been in the hairdresser's home shop, commenting, "Look mom, new place Sherry." His mother acted surprised and asked if he wanted to go in. He refused that invitation, but she had planned for the refusal and called Sherry on her cell phone to see if she might be free to come out of the shop to say hello. This was all prearranged, and it worked well.

Make a Step-By-Step Plan

After that trip, the next step was to explain to her son that they were going to visit Sherry's new shop, and when he finished his haircut, Sherry had a coupon he could use at his favorite chain to get a snack. His mother made it clear that he had to use the coupon and it would happen *after* the haircut. She also put this on the electronic schedule on his iPad,

using the app "Choiceworks." She even enhanced it by importing pictures she had taken at the strip mall, one showing the mall sign, another of Sherry standing by her shop with the food chain in the background. Generally, we do not recommend that persons with FXS be photographed or videotaped in these situations because they tend to find it anxiety-provoking to see.

Over the following month, the mother and son reviewed the schedule and plan for the haircut, followed by the coupon for the restaurant snack. His mother was concerned that he might always need a snack when he got a haircut, but she hoped it would eventually become unnecessary. In any case, we decided that she needed a Plan B just in case her son perseverated on the food and would not go in to get the haircut. His mother was prepared to take him back home without the haircut or snack. She also decided that he would not be allowed access to the restaurant *unless* it was paired with a haircut.

In this case, the problem behavior was solved because the parent was made aware of why her son was reacting the way he was, and that he could be persuaded to try a different approach. This will not be the end of our analysis, however, because he has difficulty going to other appointments—including those with me! His mother and I have set up a stringent routine for him to follow when he arrives at my office, so the situation is gradually improving. The chart below lists the steps of our programming so that we are all able to follow the procedure, which helps him trust the plan and reduces his anxiety.

Step	**Outcome**
1. Mom pulls up to the building.	Child gets out of the car when prompted.
2. Child enters building with his mom and goes directly to the work room.	Child is reinforced with a token.
3. Child sits at worktable.	Child earns another token.
4. Child begins the first task.	Child is earns another token.
5. Child completes the last task in the series.	Child counts tokens and waits for the adult to walk him to the waiting room where he is given his iPad with a favorite game. This allows the therapist and his mom to consult about his session. This consult lasts only 5 minutes, as promised to the child.

As the child becomes more successful with this program and is able to sustain his attention, he will be expected to perform a longer string of tasks, making his time in the office longer to last the entire session. He is motivated to earn the tokens because it signals the session completion. This works because he is motivated to go home, where it is less demanding.

His parent follows an exit procedure exactly as presented so that he has no surprises to make him more anxious and cause a fight-or-flight reaction. He is escorted to his car, buckled in and given a snack while his favorite video is playing—but only if he follows the protocol. If he does not, he can be rewarded with a less desirable reinforcer. It is tempting to give in to the child's demands when the session has gone well, but remember this level of compliance is tied to a chain of behaviors, one of which is to get into the car, buckle up and wait for Mom to give the reinforcer. It sets the stage for compliance throughout the activity, and if one or two steps are unsuccessful, it will dilute the efficacy and open the door to negotiations and noncompliance.

The Importance of Flexibility

These solutions have proven successful with this child, albeit with some changes and careful attention to details. If his behaviors had been treated with a stringent and inflexible behavioral bent not geared to the FXS phenotype, some of the pieces would have been lost. The steps might have been modified, but would the parent ever really understand the function of her son's behavior? Further, would she consider how the uniqueness of her son's phenotype played into his behavior?

Unfortunately, life is not always predictable, and "stuff happens." In order to succeed and not become overwhelmed, it is advisable for parents of children with FXS to choose one activity at a time and carefully analyze the steps required to make that activity successful. After determining the steps, identify those that are most difficult or most likely to cause outbursts. Analyze potential antecedents that may contribute to outbursts or other forms of resistance. Again, take time to think about the activity and how the characteristics of the phenotype might make things difficult for your child. Always consider how your reaction to the behavior may be maintaining it.

Keep these points in mind and you'll have a good start on enjoying late summer and fall outings that are rewarding for your child and the entire family.

The Many Functions of Perseveration

What is perseveration? The dictionary defines it as continuation of something (as repetition of a word) usually to an exceptional degree or beyond a desired point. Anyone who lives with a person with FX is very familiar with this continuation of a repeated word or phrase. This repetition can be maddening when you are the recipient. At face value perseveration has no redeeming features and simply serves as an irritant. But in the life of one with FXS, it can be a valuable asset. Perseverative verbiage often accompanies arousal and acts as a buffer to reduce the anxiety. The repetition can be comforting like a mantra or song.

Understanding the function of the perseveration can be better understood if one listens to what is being repeated. For example, when a young child repeats a phrase like, “and then or next?” it is easy to understand that the function is related to needing to know what is coming next. This continued repetition serves as a safety net to assure the child that there are no surprises awaiting him and that he will be OK with the plan.

Sometimes, perseveration serves as a way to initiate conversation. Often the conversation begins with the same phrase over and over without really listening for a response. The perseverative phrase may be borrowed from an observation, television program or video. This type of conversational mechanism is far different from scripting or echoing a phrase heard in a video. The echolalic response is more typical of individuals with autism (Murphy & Abbeduto, 2007). Phrases such as, “I didn’t do it, it’s your fault” or “right on” is more consistent with the speech patterns of those with Fragile X Syndrome. These rote phrases open up or keep a conversation going without much regard for the conversation or topic that follows. Additionally, because the phrase can become a trademark of the person using it, the response from the listener is predictable, creating less social stress for the person with Fragile X Syndrome.

Sometimes, the repetitious verbiage creates rehearsal of an action or task. For example, repeating the steps of a direction over and over tends to hold information to compensate for short term memory deficits. Using perseverative talk can enhance overall functioning and executive functioning.

How can someone “decode” perseverative communication to understand what the person with Fragile X Syndrome is attempting to communicate? Using a cloze strategy to finish out the statement can be helpful. For example, sometimes when a person with Fragile X Syndrome is especially aroused, they remember certain aspects of the experience that caused the hyperarousal. They may repeat something like, “he hit my leg”, “he hit”, “he hit and got mad, mad.” Of course this kind of conversation gets stuck when one tries to question what happened while sorting out the repeated phrases. Following up with “who hit”, “what happened?” “why did he hit you?” falls short and may even result in more frustration. Using a cloze phrase such as, “today at school, he hit you and got mad” will then generate additional comments such as, “Jim got mad, Jim hit me, got mad and hit me, got in trouble, Jim was bad.”

Females with Fragile X Syndrome may also use perseverative speech but as would be expected, it serves a different purpose. Anecdotal accounts suggest that females use the perseverative talk to emphasize a salient point or to mark a particular aspect of an experience. For example, the perseveration may not be repeated consecutively, but rather pop up several times in the conversation. Often, when a female with Fragile X Syndrome is communicating an especially emotional experience, she may intersperse a comment she repeats several times in the conversation. An example would be;
Therapist: How do you think your session with David went?
Client with FXS: He needs to be serious and look at people when he talks.
Therapist: Do you think he may have been too emotional to look up? I noticed other people in the group felt sorry for him.
Client with FXS: He needs to look up, he doesn't even look at me.

This perseverative thought persists in a way that interferes with the conversational flow and content, but clearly indicates what was most difficult about their interaction. The female was unable to get beyond David not looking at her to understand the reason for his behavior. This common reaction can be redirected by repeating the perseverative language. In the example above, the therapist could say something like, "David was so upset, he couldn't even look at you…He was really upset and didn't look up when he spoke to you". This conversation puts the behavior in a context that uses the female's language to better understand the interaction and more importantly the emotional content.

Understanding the function of perseveration requires the observer to look beyond the monotonous repetition of the verbiage into what in the environment is prompting the excessive repetition. And equally as important, is to attempt to extract meaning from the perseveration. Take time to listen to the perseverative talk and utilize the "fill in" or cloze method to see if the annoying features just may become useful in your quest to better understand.