

## THE VOICE OF THE CHILD BEHIND AUTISM

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Anyone who has come into contact with autism will agree that of all children, those with autism are the most difficult to reach. Most will also agree that a great majority of children with autism love music, singing and repetitive movement. At The Listening Centre in Toronto, we often hear comments such as the one made by this mom: "Music was my child's road to language. For the longest time I had to put everything into a song". Activities to engage children with autism, are more likely to be successful if they are accompanied by music - whether they be listening to music, moving to its rhythm or singing. This in itself is not communication but is a starting point, a hook which can become a first pillar in building bridges toward nonverbal communication, vocalization, speech and language. In other words, when used appropriately, music, singing and movement can be stepping stones that help children with autism develop the intent and the pre-language needed to communicate - skills which are usually absent.

This article will draw from my experience of using listening training with children with language, learning and communication problems for the purpose of describing the listening state or, more appropriately, the non-listening state of autism. I will then describe how sound stimulation, and music in particular, can be used to trigger the child's readiness to communicate. Finally, I will elaborate upon the way we use singing and movement to bring out the voice of the child behind autism.

### **Autism: No Longer a Rarity.**

Helping children with autism has been part of my work for as long as I can remember, dating from the late 1960s, when I began working with Dr. Alfred Tomatis and his listening training method of sound stimulation. In those earlier days, the proportion of these children in his Paris "Centre du Langage" was small and reflected the rare occurrence of autism, which at the time only affected an average of one child in one to two thousand. This situation continued until about a decade ago, when the number of the children diagnosed with an Autistic Spectrum Disorder, including Pervasive Development Disorder (PDD) and Asperger Syndrome showed signs of having increased. Fifteen years ago, it was not unusual to hear a pediatrician say that she had encountered only two or three cases of autism in her entire career. Now, most schools have several children who are diagnosed in the autistic spectrum, and most people know a few such children within their own circle of friends and acquaintances. Estimates of the actual rate of the incidence of autism vary, with some statistic indicating that it has increased by tenfold or more<sup>1</sup>.

There are many possible reasons for this increase, but such a discussion goes beyond the scope of this article. In the most simple terms, the introduction of the diagnosis of Pervasive Development Disorder (PDD), a syndrome that includes what was previously described as “autistic tendencies” or “autistic behavior,” has something to do with the increase in the incidence of autism. Based on my observations over the last few years, the actual number of children who present a purer form of autism has not varied significantly and continues to be extremely rare. By contrast, the number of those now diagnosed with PDD or Asperger Syndrome (the "Geek Syndrome," as it has sometimes been referred to the media<sup>2</sup>) has increased considerably. While less effective for children with a purer form of autism, interventions are much more effective with a great majority described as having "autistic tendencies".

Our work on autism at The Listening Centre in Toronto was featured in a television documentary on the Discovery Channel in 1995<sup>3</sup>. Since that time, the number of children in our care who are diagnosed in the autistic spectrum has soared and now represents about a third of our caseload, or about 400 children.

My work with autism is based on an approach that is similar to my work with learning disabilities. A personal experience with dyslexia had enabled me to understand learning disabilities "from the inside out" – from the "dyslexified world" of the individual<sup>4</sup>. While never having experienced autism first hand, I find similarities between autism and dyslexia that offer me a unique insight into autism. This frame of reference has also helped me decipher how those with autism experience themselves and the world they live in "from the inside out". It also helps me demystify some of the characteristics and idiosyncrasies of children with autism and to understand why they have such a hard time accessing communication and language. Understanding the child "from the inside out" is not only helpful in assessing the child, but also guides us in implementing the listening training program.

### **Autistic Listening**

In my view, while the world of the "dyslexified" is misperceived, misinterpreted and misunderstood, the world of the autistic is perceived through separate fragments of information, or sensory experiences that neither dovetail or add up to form a complete picture. In other words, the world of the autistic does not make much sense. While children with autism see, hear, and feel, what they see is not related to what they hear, which is not related to what they feel.

Moreover, this fragmented perception of the autistic not only applies to the world around the child but also to the world within or to how the child "senses" himself<sup>5</sup>. If we cannot perceive ourselves as a whole, as an entity that makes sense to ourselves, how can we perceive or relate to others as people? In other words, our ability to perceive and communicate with ourselves is the starting point for communication with others. Without this understanding of communication, language has no *raison d'être*. Words are devoid of

meaning and, at best, are used simply as labels to signal the immediate needs such as "milk", "juice" etc. An illustration of this disconnection with oneself is the tendency of the child with autism who is verbal to address himself in the third person (e.g. "Frankie wants milk" instead of "I want milk").

One of the most significant areas that has helped me draw this picture of the autistic world comes from the field of sensory integration. Jean Ayres, the sensory integration pioneer,<sup>6</sup> developed a test which examines postrotary nystagmus as a way to assess some aspects of vestibular functioning<sup>7</sup>. Postrotary nystagmus is the involuntary movement of the eyeball that results from the rotation of the body and is accompanied by a tendency to walk in circles and feelings of dizziness. These are normal responses to stimulation of the vestibular system through activities such as spinning. Most children with autism display little or no postrotary nystagmus after being rotated, an indication of the weak performance of their vestibular system<sup>8</sup>. The craving for movement, along with most of the self-stimulating behaviors so closely associated with autism (e.g., spinning, hand flapping and rocking), can be interpreted as the child's attempts to stimulate a poorly functioning vestibular system.

While their modes of intervention differ, Jean Ayres's, and Alfred Tomatis's understanding of childhood development and learning has many parallels. One of Tomatis's greatest contributions was his making us aware of the interplay between the auditory ear, which informs us of sound vibrations coming from the world around us, and the vestibular system, which informs us of our body's movements, its position in space as well as of our balance, sense of gravity, and body image. (This is why I like to call the vestibular system the "ear of the body.") If the purpose of the auditory system is to put us in contact with our outer world, then the purpose of the vestibular system is to put us in contact with our inner world. The ear as a whole mediates between those two worlds, making sure that the information flows between them. In my view, autism can be characterized as a communication breakdown between these two systems and is part of a wider sensory disintegration problem. Thus, while the "dyslexified" experiences distort listening, the autistic experiences "disintegrate" listening.

Another function of the auditory system is to control the voice when speaking, or what I refer to as "self-listening". A major consequence of the disintegrated listening in autism is the child's inability to speak and to use speech appropriately. It is quite common for children with autism to come up with new words and phrases that they are unable to emit again at will – a source of great frustration for the parents and a mystery for specialists. A word comes out of the child's mouth by chance which cannot be reproduced because the child does not "sense" that his voice and body are both part of the same entity - his own self. In other words, the auditory ear (voice control) and the vestibular ear (body awareness) do not communicate with each other, meaning that there is no mechanism in place to establish the blueprint of language.

It is not difficult to picture what life would be like if we were constantly being bombarded by the myriad of sensory input which surrounds us, without being able to regulate and

control this input. The autistic child seems to do everything possible to escape this sensory overload in order to protect himself. The problem is that both learning and interaction are impossible without outer stimuli. Even worse, the brain loses one of its main sources of energy needed to keep functioning. Self-stimulation and repetitive behaviors, such as listening to the same song, watching the same video, or repeating the same phrase over and over, help the autistic energize his brain. Self-stimulation is the child's own attempt at self-regulation.

### **The Child Behind Autism**

Another lesson learned from my experience as a youngster with dyslexia and from my work with children presenting similar problems is that we can learn a great deal by focusing on the child hidden behind the symptoms. This approach, which I systematically apply to all children I assess, has caused me to realize the great diversity of styles and personalities of those diagnosed with autism. This has also helped me understand the meaning of their behavior and, in particular, to assess their potential for recovery. There are, for example, many children with who have a profile similar to Ali.

Ali is a noisy and disruptive kid. The first thing he does in my office is to take off his shoes and socks. He then climbs onto a chair, grabs books off of the shelves, and tries to tear out the pages, throwing them down on the floor. He has temper tantrums for no reason and he pinches and spits. Ali is an extraverted child who experiences his autism as a straight jacket. His behavior is an expression of his discomfort and frustration. While difficult to handle at first, he often responds faster and more successfully to attempts designed to help him open up and ease communication than an "introverted autistic" child such as Viviane.

Viviane spends most of her time humming or mumbling abstract jargon, while staring at the sun dust coming through the window. She looks at you, but her eyes do not acknowledge you; it is as if she either doesn't see you or sees through you. While there is a smile on her lips, it is a still and distant smile. There is a "ghostly" quality to her way of walking, as if gravity had little impact on her. People compare her to an angel, a doll – until they try to pull her out from her little world. Suddenly the fairy turns to a witch as she screams and attempts to bite, pinch and bang her head with her fist or knee. Vivian appears too much at ease in her autistic state, which seems to fit her personality type perfectly. She is a much more difficult to reach than Ali, and attempts to intervene may be met with resistance and rejection since she experiences them as invasions of her private world.

### **Cracks in the Sensory Shell**

Viviane's characteristics lean toward a purer form autism, which has always been and continues to be rare. The great majority of children we help present only some symptoms of autism. Extraverted autistic children, such as Ali, are usually ill at ease in their condition and welcome help after a brief period of accommodation. As I explain to the parents, their shell of self-protection is not entirely closed - there are cracks, as indicated by their

hypersensitivity to sound and tactile defensiveness. Sensitivity to sound is not usually related to the loudness of the sound; on the contrary, many autistic children love to hear loud and rhythmic music such as rock or rap music. I think this is their way of giving their ears a work-out and of stimulating their starving brains<sup>9</sup>. The sounds they are usually sensitive to are noises such as the buzz of vacuum cleaners, electric kitchen instruments, baby cries or the sound of fire trucks, ambulances or alarm systems. What these sounds have in common is that they are continuous and cannot be tuned out by our listening protection system.

As with sound sensitivity, tactile defensiveness is the direct response to the tactile hypersensitivity from which most children with autism suffer. This often makes them seem as if they are rejecting physical signs of affection, which, in turn, reinforces the belief that autism is an emotional problem. When trying to understand the emotional world of the child with autism, take account of the sensory component of the problem<sup>10</sup>. Tactile sensitivity also applies to hair cutting and tooth brushing and explains why children with autism are often picky eaters who carefully select most food according to its texture. As with sound volume, these children tend to reject soft touching but enjoy physical contact when applied with deeper pressure<sup>11</sup>. These sensitivities are evidence of cracks in their protective sensory shell. Most children with autism are prisoners of dysfunctional senses, and any relief is welcomed. Listening training provides such relief.

### **Triggering Readiness**

A life spent dealing and helping others deal with dyslexia has taught me that tackling the problem head-on is an approach often doomed to failure. I still remember those hot summer days spent inside with a tutor, while I could hear and see through the window my siblings and friends playing on the beach. How could I learn anything with my mind elsewhere, my motivation non-existent - all the while having to deal with the learning problem? These personal memories give me a vivid sense of what children with learning disabilities must go through when sent to a tutoring place, when separated from their peers at school to attend a "special needs" class, or when taken to summer courses to improve their marks.

Most children with learning issues that we help at The Listening Centre have already done the rounds of traditional therapies, specially modified programs and other interventions and. By and large, they are still failing their grade, with their attitude toward school work keeps declining from bad to worse. In short, they are unmotivated, discouraged, angry, "fed-up" with the system – anything but ready to learn. One reason why we succeed in engaging these children in listening training is that listening to music through headphones, while playing with other youngsters, or drawing, or sleeping if they wish, is unrelated to school work and doesn't demand much effort. After a while, they begin to realize that like what they get out of the program: the feeling of not being as shy around people, the realization that their guitar playing is suddenly improving, or the sensation of completing homework faster without constant interruption or their parents on their back. These kinds of changes grab their attention and help turn their motivation around. Then, when it comes to the real thing

(studying to get the mark), they are ready to try. Being proactive in tackling the work now comes from the "inside out".

As with learning disabilities, most of the conventional interventions for autism deal with the child's difficulties head-on, requiring the children's active participation in their very areas of weakness. Children have to listen, to respond and to interact. In speech therapy, they have to do this verbally; in play therapy, playfully; and most interventions addressing social adjustment, such as behavior management techniques, depend upon the child's ability to process verbal instructions as well as to read non-verbal cues such as body language. Verbalization, playfulness, body language and auditory processing are the very skills that are deficient or non-existent in these children, which helps explain why it takes so long to teach them new information, behaviors or words. After months and months of drills, they may end up using some of these acquisitions out of habit, without making any real sense of them. This is learning "from the outside in", learning that is dissociated from the child's and that puts the child no further ahead in using these acquisitions to communicate spontaneously and appropriately. As a result, most studies on outcome treatments in autism draw a rather bleak picture of the potential and the future of these children.

Listening training is a form of intervention that is easy to implement with children with autism because active participation is not necessary until the child is ready. The only requirement is that the child wear headphones during the program and listen to music. Many parents are concerned about their child's reaction to the headphones because of tactile sensitivity (e.g. refusal to be touched on the head and ears, refusal to have his hair cut, e.t.c.). Their fear further increases when they see the big, bulky headphones. Typically, children accept headphones after a short time of adaptation because they enjoy hearing the music. This, in itself, already serves as a breakthrough for parents, as I explain to them that the music is like milk in the bottle. The baby may not like taste or texture of the succor, but quickly understands that this is the only way to get the milk.

The core listening training program takes two visits, each 15 days long with a month break in between that gives time for integration<sup>12</sup>. Several reinforcement "boosts" of 5 to 10 days each every three to six months, will be necessary to reinforce the gains being made and to obtain further gains. We primarily use the music of Mozart. In the earlier stages of the listening training we also use a recording of the mother's voice, when possible, as another means to trigger readiness, expand the child's spectrum of affect, and develop pre-language communication.

Signs of readiness for interaction start showing during and after the first phase of the program, as noted by the child's increased spontaneity and greater desire to communicate both verbally and non-verbally. The child is more present and receptive, as well as more "with it" and "with us," as evident in his greater use of eye contact. Because of the close connection between the vestibular system and ocular movements, the occurrence of eye contact indicates the beginning of different sensory modalities being integrated - the senses are starting to working together, which allows the child to focus on what he wants to

perceive. Isn't that what listening is all about? Eye contact is "listening with the eyes". The child begins to acknowledge his own image by "discovering" himself in the mirror; he then starts to acknowledge his parents, siblings and peers. He becomes more flexible, shows signs of playfulness, and is more vocal and expressive in terms of his feelings of anger, affection, happiness and frustration. There is a marked decrease of the incidence of temper tantrums that occur "for no reason," and when tantrums do occur, parents report that they serve a purpose. In short, communication intent and pre-language skills begin to blossom<sup>13</sup>. Based on these most commonly observed changes, I view listening training as preparation of the sensory ground that helps children with autism encounter themselves and, as a result, others. Once this occurs, the loops of communication, self-regulation, self-awareness and self-control begin to form. Now the children are ready to participate actively and to accept interventions such as play, speech and behavioral therapies and to benefit from these interventions from the inside out.

### **Triggering the Ear-Voice Connection**

Encouraging as they may be, these early positive results must be maintained and developed. Reinforcing the gains and securing further change may take several months or years. In particular, children who are still in a nonverbal stage may fluctuate in their early progress and may even temporarily relapse because their self-regulatory system has not yet stabilized. Key to maintaining progress is voice production since it provides a mechanism to keep listening stimulated and to close the ear-voice control loop – a must for achieving self-regulation and self-sufficiency.

To trigger the child's ear-voice connection, listening therapists use an array of techniques, some "homegrown" from experience at the Centre, and others borrowed from the fields of music therapy, play therapy and Greenspan's Floor Time<sup>14</sup>. We also borrow from the field of sensory integration to complement and reinforce the effects of the listening program with multi-sensory stimulations. To stimulate other sensory modalities during the child's listening training sessions, we have designed a special room equipped with swings, trampolines, mirrors, brushes and fabrics of different textures.<sup>15</sup> There is also a quiet corner in the room made of curtains and blankets to which the child can retreat any time he wants. The therapist's personal style and basic common sense are always welcomed, as long as they help reach our common goal of connecting the child to himself and others through the use of his voice.

While the music of Mozart continues to play its magic in triggering the child's readiness for interaction, the listening therapist plays her own magic by engaging the child in singing, dancing, jumping, swinging, clapping and other activities in which the voice is used for interaction. The child's voice is picked up by a microphone, amplified by the corrective audio-device and fed back to his ears via headphones. In helping children in the autistic spectrum become more vocally and verbally interactive, we have found the following "tricks of the trade" to be most successful. We offer these in hopes that they will enrich and complement the work of educators and therapists who work with autism.

## **Guiding and Being Guided**

During the two-hour daily listening training session, the listening therapist provides for the child's general needs, making sure that he keeps his headphones on. The therapist may initiate and activity of stimulation, but will pursue it only if the child seems up to it. In the first few days of the program, the child often likes to be left alone. He then can retreat to a semi-enclosed "cocoon" made of blankets in a quiet corner of the room. He may also choose to curl up in a suspended hammock made of spandex, whose elasticity molds and "hugs" his body tightly and holds him by the pressure of his own weight. He may prefer instead to cling to the arms and lap of the therapist. In these early stages, most children spend the greater part of their time asleep.

After a few days, the child becomes more awake and active. The swing becomes his favorite pastime, and there is an increase in vocalization, humming, babbling, laughing, and high-pitch screams. When this happens, the therapist opens the microphone input of the audio-device and places the microphone at a few feet away from the child, but out of his field of vision. Hearing his voice grow louder and clearer, the child may become more curious and make his vocalizations more varied and increasingly modulated. When this is his response, the listening therapist will keep the microphone open. However, when the child does not welcome hearing his own voice, he may stop producing sound and show signs of frustration and annoyance. When this occurs, the therapist will close the microphone momentarily and will make further attempts from time to time until the child becomes comfortable with the experience.

When the microphone is open, the therapist may introduce some songs. We usually ask parents to give us a list or to bring recordings of favorite repertoire. Key to connecting with the child is to meet him in his comfort zone and from there to expand his horizon gently and gradually while respecting his own pace. The aim of the therapist is to find a happy and comfortable balance between the child's readiness to participate in the voice work and his difficulty in engaging in new experiences. She guides the child by letting him guide her.

Day by day, the child becomes progressively more curious and begins initiating activities that had previously been ignored, such as being pushed on the swing, asking to be brushed, or "skating" on a mirror covered with soap foam. The child is also calmer, less irritable and happier. It is fascinating to observe connections between the opening up of the child's sensory spectrum and the increased vocal spontaneity and emotional range.

## **Musical Variations and Circles of Communication.**

Typically, a child with autism finds his comfort zone in repetitious, self-stimulating activities such as listening or singing to the same song over and over. The therapist meets the child where he is and uses her imagination and sense of playfulness to create variations on the theme brought up by the child. When he keeps singing the same tune with no end, she

joins in and sings along. From there, however, she progressively varies parts of the melody, tempo, lyrics, or tone, or she modifies the expression in her voice. She also moves along with him, while singing and gradually modifying his body movements. There are dozens of variations that can be made to his handclapping, jumping, rocking or dancing to the song he loves to sing. These variations lead toward new words and expressions as well as to new ways of producing sounds. The child's behaviour - once limited, self-stimulatory, and void of communication - progressively becomes playful, spontaneous, and socially appropriate. Through giggles and laughs, he lets his affect show through the cracks. A true "conversation," that is, a two-way communication begins to emerge. For the duration of the song, he is just another kid - with his autism pushed to the side. At first this may not last very long since he may revert to his repetitious habits. The therapist will revert with him, but will slowly and patiently, invite him to explore new vocal experiences.

These variations may also have a non-musical theme as a starting point. For example, an object of particular interest can serve as a starting point, as illustrated by the following listening therapist's account:

At every session, Emily brought two crayons: one red, one yellow. She was quite happy to sit and twirl them in her peripheral vision for prolonged periods. Over time, after gaining her trust, I was able to take them from her for brief periods of time. Soon, Emily's crayons became rockets on a mission to Mars with paper fins taped on the side, lipsticks for our dolls, and the top of a castle we built with blocks. By harnessing and expanding upon Emily's interest (instead of taking the "stim-toys"<sup>16</sup> away at the beginning of the session, as many had), I derailed a tantrum and allowed for a very productive session with lots of vocalizations (squeals of joy in particular), expanded her flexibility and also fostered an interactive exchange between the two of us that I otherwise might not have known to be within her reach."<sup>17</sup>

These variations also apply to repetitive high-pitch screams, jargon (e.g. tikitikiti), words, or any sort of ritual utterance which are part of the child's self-stim repertoire. The therapist starts by repeating what the child emits. This reverse echolalia gets his attention: someone else speaks his language! From there, the therapist may use all variations that come to mind to help the child widen and enlarge his spectrum of vocalization.

As one of the main characteristics of autism, rigidity affects all levels of the child's development - including mental, emotional and sensory-motor. Musical and vocal variations literally exercise the child's flexibility. As with stretching exercises, we should avoid going beyond a child's tolerance level, which may be extended at the next stretch. The therapist must also be continually tuned in to the child's cues to know his comfort level during any particular moment.

## **Motion and Vocalization.**

Singing while on a rocking horse or bouncing on grandpa's lap has universal appeal to children because motion induces voice production. It is an effective way to imprint the rhythm. - first in singing and then in speech - paving the way for flow and intonation in verbal expression. The association of singing and movement helps integrate the auditory-vestibular ear and is essential for acquisition of speech and language because it 'embodies' language. Activities that integrate sound and motion "ground" language into an experience that can be shared and communicated. Such activities contribute in giving language its "sense" or meaning. In autism, this auditory-vestibular link is missing as part of the sensory fragmentation of a child who is unable to connect his inner world with information coming from his environment. Neither the world without nor the world within makes any sense, and the words are mere shells devoid of meaning.

Most children with autism crave and use movement in an attempt to stimulate their brains through the vestibular ear. The therapist can take advantage of this need for movement as a way to trigger vocalization by using the swing, the trampoline, balance board, as well as her own body, which may, for example, become a rocking horse. She also can use action songs to trigger movement such as clapping or dancing (e.g. "Row, Row, Row Your Boat"; "Pat-a-Cake, Pat-a-Cake" etc.). She can sing in different voices and make motions to imitate different animals, such as a low throaty voice and big slow steps for the elephant, or a squeaky voice and the tiptoe steps for a mouse. If the child desires, the gaits and squeals of the entire zoo may then be explored. Countless variations lead the child from a repetitious self-stim behaviors towards activities filled with nuggets of spontaneous and appropriate interactions and pretend play.

## **Multi-Sensory Access**

Other sensory modalities are also brought to the dance. For example, the tactile and proprioceptive<sup>18</sup> senses are stimulated in sync with the vestibular by holding the child or swinging him in the hammock. Children who suffer from tactile defensiveness more easily accept being touched, held or rubbed when singing, jumping, swinging or rocking. We have to remember that, as a rule, children with autism reject light touch but crave deep pressure. They enjoy being held tightly. At a basic sensory-physical level, it gives them a sense of themselves and of their body image. Most children with autism also love to swim. The weight of the water on their bodies and the increased awareness of their movements in the heavier liquid space, adds to the sense of self otherwise missing. Connections between the "inner senses" (vestibular-proprioceptive-tactile) are also obtained through such forms of stimulation as light brushing and pressure applied to joints.

When talking to a child with autism, the therapist may hold the child's hands or massage his feet while exaggerating her facial expression to obtain eye contact. Sometimes eye contact is more easily obtained through a mirror since this is less direct and, thereby, more safe for the child. The use of puppets can also attract a child's attention. As one listening therapist

comments, “I play chase, with a puppet on hand pretending to munch on fingers or toes which puts most children in glee!” She adds, “I have yet to meet a child who isn’t interested in a puppet that slowly approaches to munch on fingers or toes!”<sup>19</sup>

When the therapist has gained the child's trust and his acceptance to move into his space, she may use a physical approach to engage him further. To grab his attention, she may tickle him, which he loves, and heed his heart-felt giggles and spontaneous words, “No! No! Don’t do it! Again please!” If necessary, in order to keep him focused, she may let him climb on her, or she may even gently sit on him! It is preferable to meet the child at his height level by crouching or lying down on the floor, rather than standing over and looking down at him.

These multi-sensory means of input help the child discover himself and identify as his own the voice that comes out of him. The perception of his voice (auditory) being produced from within his body (vestibular-proprioceptive) allows him to produce sounds of his own choosing. Self-listening is taking place, and his vocalizations are more modulated and contain more expression. The child can better control his volume, which is neither mumbled nor too loud, and may start to construct short phrases that will gradually grow longer and longer. Talking in the first person may soon replace his habit of addressing himself in the third person. He has acquired some self-control, and his voice now serves as an instrument of communication. The ear-voice connection is beginning to play its magic!

### **Singing, Moving and Being Social**

One of the main difficulties in working with a child with autism in a group setting stems from his being unable to sit with other children during circle time. Not only is he oblivious to group activities, but he quickly escapes the circle, wanders around the room, pushes the buttons of the sound system, or leaves the room altogether. Because of this common behavior, most children with autism need their own individual aide. This is not always possible, and even then may be counterproductive when the goal is to prepare the child to be self-sufficient.

The child’s readiness to sit at circle time is one of the most frequently reported effects of the listening training. It important step indicates that his “ear of the body” is beginning to listen. He has become aware of his own body and, as a result, of the space around him. He is grounded in the "here and now". While this is a good start, we must still consider how to help him participate in group activities, now that he has enough self-control to sit with the other children.

I recently reviewed a videotape of a group of occupational therapists from Seattle<sup>20</sup>. The tape featured two therapists and four children, one of the latter in the autistic spectrum. When one of the children suggested being the driver of a roller coaster, the therapist followed by saying, “Oh! You want to go in a roller coaster ride? Yes! Let’s go!” They moved the pillows, put them in a row, and sat behind each other in a straight line. Imitating

the bumps of the ride, the therapist then asked, “Who wants to go on a ferry boat?”, and they started to sing “Row, Row, Row Your Boat” while making the hand movements of paddling. One fell off the boat, and another crawled to rescue him. The boat then became a train, and the play continued. This is a colorful illustration of how pretend-play, movement and singing can be used to help children with autism synchronize their actions and attune their voices with the group. Integrating the child with autism with other children is needed for the child’s further development. While listening training is an individualized program of sound stimulation, we always work to have more than one child at a time in the therapy room to accustom them to a group dynamic. The children will then need many more group situations to learn how to become playmates.

## **Music and Play**

While looking at this videotape, I observed that the therapists had as much fun as the children on this roller coaster/boat/train ride. This natural way of being with children is similar to how listening therapists “play” their work at the Centre. Both musical and nonmusical variations that bring out new circles of communication come spontaneously – at the spur of the moment and in response to the actual situation. With children and adults alike, spontaneity triggers further spontaneity and more fun. While not as obvious at first, this is also true for children with autism. The key is never to lose track of the child who resides behind the autism.

The experienced therapist/educator does not view her interactions with the child as an exercise or as teaching, but rather as playtime that can be enjoyed with the child. While the adult’s frame of mind is critical with all children, it is particularly important with those suffering from a language deficit since these children are more receptive to the way the verbal message is being delivered than to its linguistic content. Voice quality, inflection, nuances in the intonation, and all the nonverbal messages channeled through the voice are expressions of affect, feelings and mood. Feelings that we may try to hide behind our words transpire through our tone of voice, which is perceived only too well by the child with autism. The first and foremost quality of anyone’s wanting to reach and bring out the best in these children is to fully enjoy being with them.

## **Connecting with the Child**

When asking parents of children with autism to name the single most important event that has had an impact on their child and that has triggered significant change, I have found a common answer to be their child’s encounter with an individual who seemed to get through to their child and to obtain from him what nobody else had been able to accomplish. For example, many children keep mentioning the name of one of our listening therapists years after completing their program at the Centre. The same observation also comes from adults with autism who are able to comment on their life experience. Temple Grandin, the autistic

woman who became university professor, describes in her autobiography some of the people who influenced her in her search for a balanced and productive life with autism<sup>21</sup>. This mentor may be a teacher or a therapist, but it can also be a sibling, a friend of the family, or a neighbor. As a rule, such connections are never planned and are highly unpredictable.

I can certainly relate to these assessments about the impact of one person on one child, as I consider the influence of certain people in my own life and their role in keeping me afloat during my childhood and adolescence. I do not think that they were aware of the significance of their contribution - I just remember that they had a very natural and sincere interest in me as a person. As human beings, they were as different as could be. One was a retired military officer who became a part-time teacher; another was a youngster of my own age who was a brilliant student. What they had in common was their acceptance of me as I was – they had connected with the youngster behind dyslexia.

I learned this lesson firsthand and still apply it to my work. When hiring new staff members at The Listening Centre, I first look for them to be "naturals" with challenged and challenging children. This means to be able to connect spontaneously with these children and to enjoy their presence fully - no matter what problem they may have. When the child enters the therapy, his label stays with his shoes at the door. This approach offers the best chance to have a child with autism link up with a person who could become an important figure in that child's life. Practitioners in the field should be aware of their potential mentoring and life-transforming role, which may extend well beyond the scope of their intervention and the time they spend with a child. A key ingredient in becoming such a mentor is to be able to put aside everything known about the child's disabilities and labels during the time spent with that child. Being natural with children is easy for some and difficult for others and is not learned at graduate school.

### **Delayed Responses**

For parents, educators and therapist alike, one of the most disheartening experiences about autism is the child's lack of reaction to attempts being made to reach and teach him. The child gives the impression that either he is on another planet, has no interest at all, or, worse, that he has no understanding of the message being conveyed. A natural reaction to this irresponsiveness is to give up on the child. In other words, the child is unwillingly using behavior management on us, and, as a result of his negative reinforcement, we stop trying to help him. We then conclude that he doesn't have the capacity to acquire new skills. Then out of the blue, he may come up with something that he learned hours, days, or even months earlier. It can be a new word, an answer to a question, or potty training.

This delayed response indicates that the child is absorbing information but still needs more time before being ready or able to express what has been learned. While excessively pronounced in autism, this "learning style" is also common with other learning disabilities. Soon after beginning my own listening training with Dr Tomatis, I started to realize that I knew much more than I had previously thought on subjects that I had failed repeatedly. This

impression was validated by the rapid improvements in my marks. We at the Centre constantly observe the same phenomenon with many of our clients. Moreover, I feel sure that this delayed response has been experienced by all of us at one time or another, when we're struck by a sudden "click" of the mind or a "eureka!" well after the fact. When assessing students with a learning problem, I work to discover if they are still trying to study or if they have given up altogether. Youngsters who still struggle, even if unsuccessful and frustrated by failed attempts, are more likely to respond quickly and positively to the listening training than children who have given up trying.

It is crucial to start stimulating children with autism and to interact with them as early as possible - and to keep doing this no matter what. Their lack of response should not be a deterrent. We have to understand that their problem is about processing and expressing, but not necessarily about acquiring. All the time spent working with these children without any apparent response is not time wasted. We are preparing them for the day when they are developmentally ready – the day they experience that "click" – to know how to use what they have acquired. Being part of a peer group and being accepted by the group become more critical at puberty. The lack of social skills so pronounced in children with autism makes life even more challenging for them, and the resulting peer rejection often makes matters worse. But children with autism who are used to being part of a group of kids on a daily basis are far more likely to adapt than those who for years have followed their inclinations to withdraw and distance themselves from others. Making a child with autism feel part of a group is a lot of work for parents and siblings, as well as for educators at daycare and at school, because group interactions seems to go against what the child is seeking. The natural tendency would be to let such children do whatever they like; that is, to let them watch their video again and again or let him indulge in any other ritualistic and relationally-empty activity. Instead, we must realize that because of their social disability, children with autism need as much exposure to peer groups as children with learning disabilities need exposure to teaching.

## **To Conclude**

Does listening training work in all cases if autism? While results are not always clear-cut and vary from child to child and in accordance with each individual's needs, I can report that communication intent and pre-language skills improve and that vocabulary increases for the great majority of children who experience such training. In other words, they make themselves understood and, to some extent, understand others better. One half to two thirds of them acquire various degrees of spontaneous, communicative and conversational speech. All of them respond better to traditional interventions and are more prepared to benefit from the educational system, and all make a significant step toward independent living.

There is something fascinating, not to say mesmerizing, about autism. It may be that autism gives a face to one of the greatest mysteries of humankind, one of the last uncharted territories of science. The more I work in the field of autism, the more I learn about child development, learning and behavior. But do I really learn more about autism? I am not sure.

However, I am not discouraged because I know that there is a child hidden behind autism and that much can be done to help that child find his/her voice.

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## Endnotes

<sup>1</sup> For more details on the increases in the incidence of autism and possible causes, see: Marohn, Stephanie (2002) The Natural Medicine Guide to Autism. Hampton Roads Pub., pp 8 – 10. Also see the Autism Research Institute website: [www.autism.com](http://www.autism.com).

<sup>2</sup> Silberman, Steve (2001, Dec 9). The Geek Syndrome. *Wired Magazine*.

Nash, J. Madeleine (2002, May 6). The Geek Syndrome. *Time Magazine*.

<sup>3</sup> Habelfellner, Helga-Liz (1995). The Child That You Do Have. Westmount, Quebec: Filmoption International Distributors. [A Documentary produced for the Discovery Channel].

<sup>4</sup> In 1978 I wrote an article entitled “The Dyslexified World,” in which, drawing from personal experience, I described how I felt “from within” to be learning disabled and, more generally, to be affected by a listening problem. I described the person living in a dyslexified world as a foreigner within his own language and family, as well as a foreigner to his own thoughts, feelings and dreams. This text is still being translated and is widely distributed. Countless times I have heard people comment: “This is about me; you are telling the story of my life,” or “When I read this, I realized that I was not alone in feeling this way”. When Listening Comes Alive (Norval, Ontario: Moulin Publishing, 1993) begins on a similar personal note. See the “The Dyslexified World” by Paul Madaule in About the Tomatis Method (1989), edited by T. Gilmor, P. Madaule, and B. Thompson (Toronto: The Listening Centre Press, pp. 45-62). This article is also available online at [www.listeningcentre.com](http://www.listeningcentre.com).

<sup>5</sup> For clarity's sake, throughout the text I will refer to the child with autism as ‘he’ and the listening therapist, or ‘therapist’ as ‘she’. These choices reflect the slightly higher proportion of boys with autism and the higher proportion of women who work as listening therapists.

<sup>6</sup> Sensory integration builds on the larger field of occupational therapy. The defining work in the field is by Jean Ayres (1972). Sensory Integration and Learning Disorders. Los Angeles: Western Psychological Services. Two easy -to-read introductions on the theory and practice of sensory integration are Ayres, Jean (1979). Sensory Integration and the Child. Los Angeles: Western Psychological Services.

Kranowitz, Carol Sotck (1998). Out-of-Sync Child. New York: Skylight Press.

<sup>7</sup> Ayres, Jean (1975) Southern California Postrotary Nystagmus Test (Los Angeles: Western Psychological Services). See also Ayres, Jean (1989) Sensory Integration and Praxis Test (Los Angeles: Western Psychological Services).

<sup>8</sup> The postrotary nystagmus effect was demonstrated to me by Valerie Dejean, an occupational therapist and Tomatis Method practitioner. She is director of the Spectrum Center in Bethesda, Maryland.

<sup>9</sup> Some people would ask why not use Rock and Rap music in therapy if it helps stimulate their brain. The repetitious nature of this kind of music tends to reinforce the repetitious, self-stimulatory tendency that is so strong and invasive in autism. Our role, and the role of the music we choose, is to help children come out from this vicious circle which leaves no room to new experiences and creative thinking.

<sup>10</sup> I do not want to reduce the emotional component in autism solely to a problem related to hypersensitivity. However, I think the sensory component has to be taken into account when trying to understand the emotional world of the child with autism. For example, the work of Levinson on the influence of cerebellar-vestibular dysfunction on fear and phobia suggests a similar viewpoint. See: Levinson, Harold (1989). A Cerebellar-Vestibular Explanation for Fears/Phobias: Hypothesis And Study Perceptual and Motor Skills, 68, 67-84. We know from experience that sensations and perceptions that we cannot control can be very destabilizing emotionally.

<sup>11</sup> We should remember that the sensory cells of the inner ear and the tactile cells of the skin have the same origin. According to Tomatis, the skin and ear basically evolve from the same embryonic tissue, the ectoderm.

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See: Tomatis, A.A. (1981) La Nuit Uterine, Paris: Editions Stock. For more on the calming and regulating effect of pressure, see: Grandin, Temple (1996) Emergence: Labeled Autistic, (Novato, CA: Arena Press.

<sup>12</sup> All the sound stimulation the child receives through the headphones is modified by a specially-designed, audio-corrective device called the Electronic Ear.

<sup>13</sup> Roy, N.J. (2001). The Tomatis Method with Severely Autistic Boys: Individual Case Studies of Behavioural Changes, South African Journal of Psychology, 31 (1), 19-26.

<sup>14</sup> Floor Time, an intervention developed by Greenspan, works well following the listening training, because it works on the child's spontaneity, affect, and pre-language. It also takes into account the child's sensory issues. Consistent with what we try to accomplish with listening training, the purpose of Floor Time is to engage the child at an experiential level from the inside out. See: Greenspan, Stanley (1992). Infancy and Early Childhood: The Practice of Clinical Assessment and Intervention with Emotional and Developmental Challenges. Madison, CT: International Universities Press

<sup>15</sup> The design of the room and the use of sensory integration material is based on a model provided by the Spectrum Center, Bethesda, MD, and the guidance of its director, Valerie Dejean.

<sup>16</sup> Insider's jargon, this refers to objects children with autism use as means of self-stimulation; most of the time they may be crayons used as drumsticks or tin objects or any other object that can be used as percussion instruments with the purpose of making noise. This constant repetitive noise drives people crazy.

<sup>17</sup> As reported by Darlah Durnford, Listening Therapist.

<sup>18</sup> Proprioception comes from proprio, the Latin word which means one's own. The proprioceptive sense gives us the unconscious awareness of sensations coming from our joints, muscles, ligaments, and tendons. It is also called the position sense. While distinct, the proprioceptive, vestibular, and tactile senses are extremely interconnected. Sensory integration specialists call them the near senses. They have a strong influence on how we process and integrate information coming from the far senses, the auditory and visual senses in particular.

<sup>19</sup> As reported by Darlah Durnford, Listening Therapist

<sup>20</sup> I thank Rosemary White and her staff from Pediatric, Physical, and Occupational Therapy Services in Seattle for providing this tape to us. Rosemary and Georgina Graham are using the Lift in their practice. The Lift (Listening Fitness Trainer) is a light, portable, and user-friendly audio-device developed at The Listening Centre. More recently we have devised a training course and certification process that make this device available to practitioners in the fields of child care and education. For more information, see [www.listeningfitness.com](http://www.listeningfitness.com).

<sup>21</sup> Grandin, Temple & Scariano, M. (1986). Emergence: Labeled Autistic. Novato, CA: Arena Press.

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*Madaule is the author of When Listening Comes Alive (1993), now available in six languages. He is also author of numerous articles on subjects related to the value of voice and listening training and music education with children having developmental and learning problems. Two TV documentaries on his work at The Listening Centre were produced in 1995, one dealing with autism (The Child That You Do Have) and one on adults with reading disabilities (The Key to the World). His work with autism is described in a recently published book by Stephanie Marohn entitled The Natural Medicine Guide to Autism (2002).*

*Madaule offers lectures and workshops on his work, including the "Listening Experience Workshop" (1988) and the "Ear Voice Connection Workshop" (1999). Drawing from his 30 years of clinical experience, he has also developed a portable audio-device called the LiFT® Listening Fitness Trainer and with his staff has written The Listening Fitness Instructor's Course, which teaches professionals how to use the Lift Program in their private practice or school system. Paul Madaule has previously contributed two articles to Early Childhood Connections: "Music: An Invitation to Listening, Language and Learning" (Vol. 3, No. 2, Spring 1997) and "Listening Training and Music Education" (Vol. 4, No. 2, Spring 1998).*