

*...This text is based on the presentation Paul Madaule and Morana Petrofski gave at the AutismOne Conference 2004 in Chicago. It covers some of the principles defining our work with children with Autism. The last part of the text elaborates on some recommendations given to parents in clinical consultations during the course of their child's listening training. With growing interest in our work with this population, we thought that the themes covered will not only give you a good overview but also resonate with your experience and offer valuable insight.*

## **Listening Training for Children with Autism**

By Paul Madaule

This presentation has two main objectives. First, it is to introduce the Tomatis Listening Training as it applies to children with autism together with a summary of the type of results we obtain. The second objective is to share some of the insights we have gathered through years of working with hundreds of children in the autistic spectrum. I hope that our experience will help parents, educators and practitioners in their search to make life more livable for these children. For now, let's explore what listening is and explain how listening – or, more specifically, how the lack of listening – affects the child with autism.

### **Listening in Autism.**

When I told Jennie's mother that, in my opinion, autism is the most extreme form of non-listening, her response was: "but the first thing we did when we detected a problem was to get Jennie's hearing tested, and it came out perfectly normal". Then I asked why she had Jennie's hearing tested in the first place. "Because", she said "Jennie was acting as if she was deaf: she didn't respond to her name, she never babbled and she never started talking. Then she began to display extreme sensitivity to certain noises such as the buzz of a vacuum cleaner, and now she is disturbed by the barking of a dog so far away that I have a hard time hearing it. At the same time, she enjoys her music blasting. I don't understand her!" Jennie's behavior is confusing because hearing and listening are two different things. Poor listening often manifests itself as hearing too much of what one does not need and not enough of what is important. In that respect, there is some consistency in what appears contradictory at first. To have a clearer idea of what I am talking about, let's have a closer look at what listening is.

**Attuning.** Listening is the ability to attune to the sound messages we need and to leave out – or protect ourselves from – unnecessary or unwanted information. The attuning function of listening plays a fundamental role in auditory processing and attention span, both essential to the acquisition of receptive language which is deficient in autism.

**Protection.** A critical flaw of 'autistic listening' is the inability of these children to "tune out" or protect themselves from unnecessary background noise. This protection issue, which has to be seen in the more general context of a sensory regulation problem, is probably the most disabling aspect of autism. Unable to defend herself, the child is constantly over-stimulated and

overwhelmed by outside stimuli which keep startling and ‘aggressing’ her. Hypersensitivity to sound and tactile defensiveness, so common in autism, are two aspects of this protection issue. The only option left to the child is to build up a sensory shell and to lock herself in it. The problem is that this state of isolation creates a barrier for communication and learning.

**The Ear of the Body.** The ear does more than pick up sound information. The inner ear is made of the cochlea, the sense of hearing, and of the vestibular system. Balance, the sense of space, and of gravity are all vestibular functions. Our vestibular system gives us the sense of having our feet on the ground as well as control of our movements and motions. In conjunction with the proprioceptive system, it acts as the ‘ear of the body’ and plays a role in our feeling of being ‘together’, of being ‘grounded’. It is also at the base of our body image awareness and motor planning. It provides a sensory foundation to our sense of self. If we want to communicate with others, we have to be able to communicate with ourselves first. The child with autism is lacking this sense of self which, in turn, affects verbal and the nonverbal communication.

**The Ear and the Voice.** Hearing loss at birth leads to a lack of speech because the child has no way to monitor his voice. This is why many parents of children with autism, like Jennie’s, first suspect a hearing loss. However, a child with normal hearing can have a ‘listening loss’ which affects the control of her voice. In autism, where the ear-voice feedback loop is not established, the child is unable to motor plan voice production. It is as if the voice which comes out of her mouth does not belong to her. As a result, voice control and speech are severely deficient in autism.

### **Listening Training: the Origins.**

How do we reach these conclusions regarding the influence of listening on so many aspects of verbal and nonverbal communication? The short answer is: through our extensive experience and the results obtained over time by using sound stimulation as a primary mode of intervention.

**Alfred A. Tomatis.** This experience was first gathered by Alfred Tomatis, a French physician and ENT specialist who, in the 1950’s, developed the first listening training technique. In his early work, Tomatis demonstrated the role of the ear in the self-monitoring of the voice in both singing and speaking. The main contribution of Tomatis was to use sound as a mean to stimulate the nervous system and to improve listening, language and learning related skills. Tomatis also showed that sound not only affects auditory-related skills, but also has an impact on the body through the vestibular system. We experience this phenomenon in dancing when the beat of a specific music induces specific body movements. In other words, auditory stimulation induces a vestibular response. Tomatis described the auditory and vestibular functions as both ends of the same antenna which plays a central role in the integration of all sensory modalities. The auditory ear is the part of the antenna turned outward and the vestibular ear is the part of the antenna turned inward. In autism, these two ends do not seem to connect and this disconnection is only an aspect of a wider sensory integration problem. 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.

**The Listening Centre.** Closer to home, the conclusions that I draw on the influence of listening on autism are based on my own clinical experience applying Tomatis' techniques for 35 years, 25 of them at The Listening Centre in Toronto. The Listening Centre receives an average of 30-40 children in the autistic spectrum every year and I have maintained contact with clients who attended the Centre all through these years. This gives me a long-term perspective on the evolution of autism from early childhood and into adulthood as well as some insight on what can be done to maximize our efficacy in curbing the impact of autism.

### **Listening Training: the Sound Stimulation Program.**

The purpose of the listening training program is to improve and develop listening as well as to facilitate an integration of all listening-related skills.

**The Initial Assessment.** The first step of the program is an Initial Assessment which consists of a clinical interview with the child and her parents. The main purpose of this initial visit is to observe the child, to obtain from the parents a detailed description of her developmental history, and to review the reports of previous assessments. If the program is recommended, we try to give the parents a clear and realistic picture of the kind of progress that can be expected as a result of the program. If necessary we may provide some guidance on the child's placement at school and on interventions which may best complement the work at the Centre.

**The Sound Program.** A typical program at The Listening Centre consists of 60 hours of electronically modified sound stimulation (mostly music, a recording of the mother's voice and the child's own voice) that the child receives through headphones. Prior to starting the program, one must ensure that there is no fluid in the ear, no wax build-up or no ear infection which could lessen the effect of the sound stimulation. The training is most effective when administered intensively for short periods of time. A typical program is broken down in 2 parts of 15 days each, 2 hours a day. A one-month 'break' between the two 'intensives' allows the effects of the sound stimulation to "sink in".

**The 'Boosts'.** Several reinforcement listening 'boosts' of 5 to 10 days every 3 to 6 months may be necessary to consolidate the gains made and to obtain further gains. For families who live far away from the Centre, there is the possibility to do some of those boosts at home. The number of boosts is determined by the child's progress. In the case where the child reaches a plateau, we interrupt the boosts but we continue to review the situation from time to time. We sometimes recommend resuming the boosts after a year or two and we generally obtain good results again. Boosts may also be recommended at a particularly challenging time in the child's social development. For example, this can be when she starts grade school, or at the onset of puberty. In this way, the listening training becomes a part of the support system that the child, later the adolescent, and then the adult, can count on when she needs it. In our experience, it is not necessary to start the 60-hour core program again, even if the boosts have been interrupted for years.

The child receives the listening training program in a room equipped with swings, hammocks, trampolines, plastic mirrors and all sorts of toys and puppets. There is also a quiet corner covered with blankets where the child can go and retreat – and fall asleep if she wishes.

The phases of the program correspond to the different stages of development of the child's listening from the earliest stages of life up to the acquisition of speech and language. A program of sounds is used as a way to 're-pattern' each stage of the process in order to build-up or reinforce the weak or missing steps. There are two main phases in the program. The passive phase addresses the child's receptive listening skills and readiness to open up and communicate. The goal of the active phase is to expand the child's expressive listening skills such as vocalization and verbalization.

### **The Passive Phase and Readiness to Communicate**

The passive phase consists of hearing music and, when it is available, a recording of the mother's voice. There is no need for any active involvement from the child other than accepting to wear headphones. Many parents are concerned about their child's reaction to headphones because of tactile sensitivity (e.g. refusal to be touched on the head or ears, refusal to have a hair cut etc.). Typically, and to the parent's great relief, children accept headphones after a very short period of adaptation (in the first day or two of the program) because they enjoy hearing the music. I use the image of music being like milk in the bottle. The baby may not like the texture of the succor (nipple) but quickly realizes that this is the only way to get the milk. The love and fascination for music by children with autism further facilitates the acceptance of the headphones.

Listening to the mother's recorded voice is also well accepted. We know that the unborn child is able to hear and that her brain starts imprinting information as early as in the last few months of prenatal life. The mother's voice facilitates the re-patterning of the 'music' of speech, that is its 'melody' and rhythm, its tonal inflections and modulations – all prosodic elements which give the message its nonverbal, emotional and expressive content. The 'lyrics', that is its semantic content, the meaning of the message, is acquired later.

The typical changes reported during the passive phase indicate increased receptiveness. The child is more 'present', more "with it" and "with us" as evident in her greater use of eye contact. Because of the close connection between the vestibular system and the ocular movements, occurrence of eye contact indicates the beginning of different sensory modalities being integrated - the senses are starting to work together, which allows the child to focus on what she wants to perceive. Eye contact is 'listening with the eyes'. The child begins to acknowledge her own image by 'discovering' herself in the mirror; she then starts to acknowledge her parents, siblings, and peers.

After a few days of higher level of activity and often more incidence of self-stimulation due to the intense dose of daily sound stimulation, the child becomes calmer, more peaceful and better regulated with a decrease of her hypersensitivity to sound and tactile defensiveness. Her

responses become more age-appropriate. She also becomes more flexible, shows signs of playfulness, and is more vocal and expressive in terms of feelings of anger, affection, happiness and frustration. There is a marked decrease in the incidence of temper tantrums that occur “for no reason”, and when tantrums do occur, parents report that they now serve a purpose. In short, communication intent and pre-language skills begin to blossom. The child is now beginning to open up; she is more ready to interact socially and to learn. It is time to move to the next phase of the program.

### **The Active Phase and the Ear-Voice Connection**

Some would be satisfied with the results obtained at this stage of the program but, encouraging as they are, these early changes must be maintained and developed. Reinforcing the gains and securing further change is the longest and the most involving part of the program. In particular, children who are still non-verbal may fluctuate in their early progress and may even temporarily relapse because their self-regulatory system has not yet stabilized. Voice production is the key to maintaining progress 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.

In normal development, children hear the sounds of language first to then realize that they can reproduce what they hear with their own voice. This self-listening mechanism is the starting point of the acquisition of expressive speech, an acquisition which did not happen, or was interrupted in autism. The purpose of the active phase is to re-run the developmental milestones of voice production from early vocalization (babble, jargon) to increasingly advanced verbalization (words, sentences and conversational speech).

During the active phase, the child continues to hear music or songs in the headphones while she starts to hear her own voice picked up by a microphone. The introduction to the ‘microphone work’ is done progressively by the Listening Therapist whose first task is to bring the child to accept the perception of her own voice. At first, the child doesn’t like to hear herself. That first encounter with her own voice may upset her or silence her altogether. Then, little by little, she gets used to it and may even come to enjoy it. To encourage the child to progressively widen the spectrum of her voice production, the therapists uses an array of techniques, some borrowed from the fields of play therapy, music therapy or Greenspan’s ‘Floor Time’, some ‘home grown’ from our experience at the Centre. In short, our approach is to start with what the child is used to and capable of producing with her voice – and, from that point on, to progressively enlarge her vocal spectrum. Most children with autism like to sing, they like movement, they enjoy multi-sensory input and they tend to self-stimulate. These are our main triggers for vocalization.

**Singing.** We ask parents to bring recordings or to give us a list of the child’s favorite songs that we use to encourage her to sing or that we sing along with. Then we may ask her to repeat some words of the lyrics or ask questions on the theme of the songs. Singing does not have the communicative purpose of speech but it is an excellent catalyst for speech because it brings out non-verbal expressive elements to the voice such as tonal inflections and flow.

**Movement.** Most children with autism crave movement and use it as an attempt to stimulate their brain through the vestibular ear. The therapist takes advantage of this need for movement by using the swing, trampoline, hammock, balance board as well as her own lap which may become a rocking horse, to get the child to express her excitement through spontaneous vocalization and speech. We didn't invent anything. Singing or reciting rhymes on gramma's lap are time-honored tricks to facilitate voice production and the acquisition of speech. Like sound invites movement as in dancing, movement invites the sound of the child's vocalization – another example of the interplay between the auditory and vestibular systems.

**Multi-Sensory Input.** The child with autism responds best to multi-sensory forms of interaction because of the poor regulation of his sensory system. When talking to the child, the therapist may hold her hand, or massage her 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 safer for the child. The mirror also helps the child to see her face beside the therapist's. This makes it easier for her to model what the therapist shows her to do, shaping a word with the lips or making faces for example. Because most children with autism are very visual, the mirror is an efficient facilitating tool. The use of puppets with their funny voices can also attract a child's attention. All forms of sensory stimulation such as brushing, deep pressure massage, and joint compressions are used to engage the child in spontaneous verbal interactions.

**Vocal Self-Stim.** The most common form of vocal self-stim of a child with autism is echolalia. Then come the endless repetition of meaningless utterances, words, phrases, video clips, TV ads and the like. While self-stimulation should not be promoted and reinforced, it can be used at our advantage as a starting point for a vocalization game. For example, the therapist starts by repeating what the child emits. This reversed echolalia gets the child's attention. Someone else speaks her language! From there, the therapist may use all the sound variations that come to mind to help the child widen her phonetic spectrum.

### **Therapy as Playtime**

Listening Therapists follow some general guidelines when working with the child but their interaction is playful and spontaneous. The first quality that we ask a therapist who comes to work at The Listening Centre is being a 'natural' with children. The therapist does not view her interaction with the child as an exercise or as teaching, but rather as playtime that both of them fully enjoy. While the adult's frame of mind is critical in the presence of all children, it is particularly important for those suffering from a language deficit since they are more receptive to the way the verbal message is being delivered than to its linguistic content. Voice quality, inflection, nuances in intonation, and all the nonverbal messages channeled through the voice, are expressions of affect, feelings, and mood. The 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 wanting to reach and bring out the best in these children is to fully enjoy being with them.

## Supporting the Parents

I recently met with the mother of Shawn, a 13 year old youngster. She shared with me her frustration with Shawn's Special Ed teacher because he doesn't believe that Shawn does his homework on his own, insinuating that it is Mom who does it for him. His point is based on the fact that Shawn is unable to complete the same work at school. In his opinion, Shawn doesn't have the potential. Mom admits that she helps Shawn to organize his work at first, but he completes his project all by himself. For her and for her husband, this is the last straw. After years of 'fighting' with the school system, they decided to home school in the morning. Shawn will still go at school in the afternoon for the social and for the physical activities.

I have heard hundreds stories like this one. In this particular case, I have known Shawn for 9 years and the changes that I keep seeing year after year are amazing for anyone who is used to working with children with autism. The nonverbal 4 year old with 'classic' autism is now a teenager who acknowledges others, who can carry short conversations, who asks very pertinent questions and who has a few friends. He is still a loner and he still can be easily distracted and overwhelmed. The parents are frustrated because every new teacher or specialist who meets him draws conclusions on him based on where he is now without taking into consideration how far he has come. It is by knowing how much has been accomplished that one can deduct that there is more to come. His progress is the proof of his potential. Yes he is still delayed, both socially and academically and he still has a long way to go, but this is in part because like all children with autism he was very late to start. He needs time, support and a lot of encouragement to keep moving forward and to catch up. Most importantly, he needs the support of people who, like his parents, believe in his potential. But the parents themselves also need the support.

When we meet a child, our years of experience give us a long term perspective that we can convey to the parents to help shed some clarity on a situation that they often perceive as a maze. In most cases, it also gives some realistic hope concerning the future of their child. When I met Shawn for the first time, I took note of the nature and severity of his autism, but more importantly, I focused on the young boy behind the autism and I saw a kid who was overwhelmed and uncomfortable because his sensory system was not working. I knew it was going to be a long and difficult road for him but I foresaw the potential. I shared my thoughts with his parents and we decided to work together. His reaction to the listening training was very much in line with the progress I described earlier in this presentation. Shawn knows well when his sensory regulation system starts getting out-of-sync and he asks to come back to the Centre once or twice a year. Along the way, he has benefited from other interventions and spent several years in a school for children with autism which helped him to mainstream into the regular school system. His autism is still present but not nearly as disabling as it was and I expect that, as an adult, he will be able to lead the life he wants with minimum support.

As a Clinical Consultant in the Centre, I spend more than 80% of my time counseling the parents of the children in our care and I view this guidance as my main contribution in helping the child. There is no school to learn to be a parent, never mind a parent of a child with autism. With a diagnosis in hand, most parents are left with the daunting task of building up their own resource

base and developing strategies of intervention. Proceeding by trial and error, they become the best specialists and the best advocates their child will ever have. But parents need perspective. They need to know if they are on the right track, if they are allocating their resources wisely, and whether they have a proper understanding of what is required to best help their child. They need to talk and be listened to; they need feedback and support. The following are the most common recommendations we give to parents of a child with autism

**Focus on the Child Behind Autism.** When the child is given a label, teachers, practitioners and parents alike see the child through the lens of the label. As a result, there is little room left for the child behind the label of autism to develop, and to express himself – to exist as an individual. Remember Shawn’s teacher who could not believe that he is capable of completing his homework on his own. Shawn’s label certainly influenced the teacher’s judgment. My work with the parents is to help them reframe many of their child’s behaviors from the point of view of the child’s style and development and not from the point of view of his autism. Let’s take temper tantrums for example. All children go through the ‘terrible 2’s’ but the child with autism does not seem to know how to come out of it. The tantrums are not a characteristic of his autism; in many cases they are the expression of his frustration of being unable to communicate because of his autism. The tantrums are the child’s way to voice his discomfort. They indicate to me some degree of readiness and openness for the help we offer him. As difficult to take as it is, his outburst may be an indication of his motivation rather than a behavioral problem. It is a sign of the child’s potential and not another symptom of autism. I come to this conclusion because during the course of the listening training we often observe that an increase of outbursts come hand in hand with an increase of spontaneous language. Expressiveness and readiness to communicate may take different shapes at first. To explain what is happening, I use the image of a recently dug well. The mud comes out first, then comes the clear water. This ‘extended terrible 2’s phase’ may be the necessary step to access the next stage of development – the verbal communication stage.

**Don’t Take a Lack of Response for an Answer.** One of the most disheartening experiences about autism is the child’s lack of reaction to attempts being made to reach him and to teach him. The child gives the impression that either he is on another planet, has no interest at all, or worse, that he doesn’t understand. 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 the result of his negative reinforcement, we stop trying to interact with him and we leave him in his world of isolation. All of us who live and work with children with autism need to be constantly reminded to keep interacting with them no matter what. They may not show interest at that moment but the information is sinking in anyway – and it will likely be used by the child at another time. If we stop trying, we stop stimulating, and stimulation is what he needs.

**Multiply Situations of Spontaneous Interaction.** Autism is primarily a communication breakdown and the starting point of all intervention concerning autism is to deal with this communication problem. To do so, it is important to keep him exposed to situations rich in interactions as with any other kids. He may not be able to participate. He may even give the impression that he doesn’t care by wandering around, moving away, turning his back or staying



on the sideline, but this doesn't mean that he has cut off. Many children with autism surprise us when we realize how much they remember of an event which they did not seem to be a part of. Like any other children, the child with autism needs to be exposed to what he has to learn. This learning may not apply immediately, but it is in preparation for the day when he is more ready to reach out. This point favors an integrative approach at school. Parents often ask me what other therapy I recommend to further the progress. My answer is: "the kids in the playground" because no therapy provides what the child with autism needs most: a spontaneous situation. The peer group is essential because children are masters of spontaneous interaction. They will be in his face and will not take no for an answer. In other words, the child with autism should have the same social exposure as any other children, even if he shows no interest or if he resists. The only situation to avoid is a loud and confined environment such as a busy gymnasium or the shopping mall during the Holiday Season.

**Use Stimulation to Counteract Self-stim.** Self-stimulation and perseveration in their multiple forms are the most visible external signs of inappropriate behavior. Many parents comment that if the child stopped rocking in the subway, or repeating the same meaningless phrase over and over, or twirling crayons in front of his eyes with no end to it, nobody would notice he is autistic. For me, self-stimulation is the child's way to satisfy his need for feeding his starving brain. When you walk beside a schoolyard during recess many of the noises you hear and the gestures you see sound and look quite 'autistic'. This is because all children seek out a tremendous amount of stimulation. It is the child's natural way to provide the brain with the electro-chemical energy it needs to produce the billions of connections necessary to develop and refine its multiple and increasingly complex functions. After recess, the childrens' self-regulation mechanism is fine-tuned again: they are ready to sit still and stay focused for another hour or so. The difference is that the kids in the courtyard find socially appropriate ways to stimulate themselves through play, while the kid with autism is unable to do so. Trying to stop a child from self-stimulating is most often counter-productive because he quickly finds other forms of self-stimulation. The solution is to prompt him to do what he doesn't do spontaneously: to re-direct the self-stimulation by providing him with other means of sensory-motor stimulation. Swings, trampolines, balance boards or musical instruments can be helpful to re-direct him as well as any activity which keep him occupied like reading him stories, singing his favorite songs. As it was mentioned before, the listening training helps to reduce the 'stimming'.

**Seek Multi-Sensory Forms of Activities.** Shawn's mother was telling me during our interview that he is always at his best on a sailboat; he is calmer, happier, more focused and more verbal. She also adds that he can stay perfectly comfortable in the cabin for hours in a rough sea when the rest of the family has to stay on the deck looking at the horizon to avoid being sea sick. This indicates that the movement of the sea stimulates his hypo-functioning vestibular system which, in turn, improves self-regulation, giving him a better sense of self and of being in control. The child's fascination with water is well known in autism. This is in part because the weight of the water on the body and increased awareness of movement in the heavier liquid space, reinforces the child's sense of self. For this reason, activities which promote interaction and two-way communication are more effective in a bath tub or a swimming pool. Horseback riding is an excellent multi-sensory activity with the added dimension of the need to maintain attention and

vigilance for an extended period of time. Connections between the ‘inner senses’ (vestibular-proprioceptive-tactile) are also obtained through such forms of stimulation as light brushing, massage and joint compressions.

**Choosing Helpers.** The question of how to choose a helper for the child is often raised by the parents. Our recommendation is to proceed very much as we do at the Centre by inviting the candidate to come and work a couple of days and spend a few hours at a time with the child to determine if both are comfortable with each other. The main quality required from the helper is to be a ‘natural’ who fully and genuinely enjoys being with the child. This is not a skill that is taught at college. Should the helper be knowledgeable about autism? Not necessarily. She or he should be knowledgeable about the child in their care – and the parents are in the best position to fill them in. We also offer the possibility for the helper to come and spend some time with the child at the Centre to show how we interact with him. When talking with adults who recovered enough from their autism to be able to share their experience, I am struck by the number of them who identify one, or very few individuals, who had a major impact in their life. In their opinion, these ‘mentors’ did more to help them out of the autistic void than any educational or therapeutical intervention they receive. They did it by connecting directly with them and by leaving their disability in the background. Unfortunately, the child is the only one in a position to choose a mentor and we never know the criteria he uses. However, many children keep asking for one or another Listening Therapist long after the program at the Centre was completed. This indicates to me that a judicious choice of a helper may facilitate their search for a mentor.

**Schedule of Interventions.** Parents often ask me what is the ideal schedule of interventions for maximizing the efficacy of each individual one. The answer widely varies from child to child but, as a general rule, one should start with those interventions which “clear-up the system” at the bio-chemical level: heavy metals, allergic and auto-immune responses, gastro-intestinal problems etc – the string of issues often associated with autism. The next intervention on my list is listening training because its effect can be viewed as a ‘preparation of the ground’ for other interventions. The role of listening training as a facilitator – or a catalyst – for other intervention is further reinforced by the fact that the child’s active participation is not required at the beginning of the program. The listening training can be paired with Sensory Integration techniques which also work on the regulation and modulation of the sensory and nervous systems. When the child is ready to interact ‘from the inside out’, techniques such as Greenspan’s Floor Time are recommended as well as speech and language therapy. Behavior management techniques can also help but I recommend them when there is a need to solve specific issues such as toilet training, a sleeping problem or self-destructive behavior. In my experience, behavior techniques work best in conjunction with sensory-based approaches.

Some parents then ask what happens if this order has not been respected? I reassure them that nothing is lost, even if the child has not responded to previous interventions. The information he received is “stored somewhere”, but the child is not yet in a position to make use of it. I can state this point with confidence because we very often observe the emergence of previous acquisitions during the course of the listening training. And I keep reminding the parents that no therapy will

ever replace the playground, the pool, the other kids and the love and support of the family at home!

## **To Conclude**

Does listening training work in all cases of autism? While results are not always clear cut and vary in accordance with each individual's needs and parents' expectation, 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 significant steps toward self-sufficiency and independent living. As a rule, the younger the child, the better the results, particularly when there is no speech. But we also obtain satisfactory results with older kids and adolescents.

As an illustration of the type of results we obtain and parents' perception of The Listening Centre services, this is a card we received a few weeks ago, written by the mother of a 4 year old boy who came from the US. Mom sent the card days after the end of the second intensive phase of the program.

To all the Listening Centre Staff:

Our family wants to sincerely thank you for the service you have provided for Jonathan. Besides the wonderful results we are seeing we also appreciate the care and concern you all expressed for Jonathan and our family while we were in Toronto. We felt most welcome while in the Centre. Jonathan loved his therapy!

Jonathan now is able to produce appropriate sounds on demand. He can use about ten initial consonants for what he wants. He actually is willing to practice the production of sound with Mama and Daddy! He seems to be proud of his new ability. And he listens better! He actually pays attention to conversations around him and spontaneously tries to join in. My parents (his grandparents) were amazed at how "different" he is. While we still have a long way to go we see movement toward the goal. We hope to be able to report even more progress down the road.

Luana-(*Luana Camplone, Listening Therapist*) Thank you for being so gentle with Jon during his difficult adjustment during his first session.

Cristina-(*Cristina Alvaradejo, Listening Therapist*) Thank you for the passion and enthusiasm which you bring to your job! Jonathan loved his time with you.

Morana-( *Morana Petrofski, Co-Director and Clinical Consultant*) Thank you for answering the many questions we had – often times while you were busy doing something else.

Darlah-(*Darlah Durnford, Coordinator and Listening Therapist*) Thank you for spending so much time playing with James (*Jonathan's brother*) while we had our counseling with Paul. Thank you for being so accommodating and welcoming – always with a smile!

Paul- Thank you for spending so much time counseling us, listening to our questions, and, most of all, for seeing the potential in our son. Thank you for seeing past his obvious difficulties to his strengths.

Our warmest regards, Aaron, Heather, James, and Jonathan

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Note: Some sections of this presentation are drawn from information presented in a recently published article by Paul Madaule entitled: 'The Voice of the Child Behind Autism' (see resources).

## Resources

### On Listening Training in General:

Madaule, Paul., When Listening Comes Alive: A Guide to Effective Learning and Communication, Norval, Ontario, Canada: Moulin, 1993.

Tomatis, Alfred A., The Ear and Language, Norval, Ontario, Canada: Moulin, 1996.

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