Melodic Intonational Therapy to Facilitate Language with Autism
Child-Case Study

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Introduction
Kanner’s (1943) initial description of children diagnosed with early infantile autism. Social Communication deficit is one of the most obvious problems in Autism. There might be a lack of joint attention, which is ability to coordinate objects and person in social environment (Adanson & Mcarthur, 1995). Lack of joint attention might be core deficit and interfere with autism children’s language, game and social interaction (Charman, 1997). One of the most salient aspects of deviant speech in autism is the frequent occurrence of echolalia. Autistic echolalia may be related to fail to engage in joint attention activity (Paul, 1987).

Prizant’s (1983) suggested austistic echolalia of extreme reliance on a gestalt type of processing, which relay on about right-hemisphere processing. She has suggested that this style could account for some of the delayed echolalia seen in verbal autistic individuals, as they store echoed utterances as unanalyzed wholes to serve a wide variety of communicative functions.

Clinical observations have repeated showed their responsiveness toward and high interest in musical stimuli. Music like singing can make autism children listen to others, imitate rhythm or vocabulary and singing song could involve the interaction of symbol and have joint attention with the singer (Abramson, 2006).

Sparks & Holland (1976) developed Melodic Intonation Therapy (MIT) for aphasia pt, which left hemisphere was impaired after stroke. They emphasized that right hemisphere is involved in processing the prosody of propositional language. Melodic Intonation is based on the spoken prosody, which was based on the 3 elements of verbal utterances-pitch, tempo, and rhythm. Tempo-lengthen to a more lyrical utterance, pitch-stylize into a melodic pattern, rhythm-the rhythm and degree of stress for purpose of emphasis is exaggerated. Using fading (spoken song) to returning to spoken prosody and linguistic content was high priority communication. This study modified the MIT and applied on an Autistic child.
Case data

This 4 year old boy had been diagnosed as autistic by a psychiatrist, psychologist and early interventional professional team, when he was 3 years old. Including (a) disturbance of language and communication, (b) ritualistic and compulsive behavior, (c) disturbed social relationships, and (d) onset of the disorder prior 30 months of age. Subject was some verbal and produced some emerging spontaneous language forms as well as immediate and delay echolalia. Through mother’s description on Preschool Language Scale (Zimmerman, et al, 2002), pt was near 2 year old receptive and expressive language level.

In the beginning, in clinic the client could not follow simple command, instead seeing the puzzle, pt sat down to play, pt could repeat “I want to eat cookie “ after seeing the cookie without eye contact, most of time pt just sang his song intelligibility or spoke utterance without understandable. When SLP sang with him, client was happy with good eye contact, so combination with the animals puzzle and sang songs, then knocking the iron instrument and reunion with MIT and practiced the social, verbal and comprehension task

Method

Knock the iron instrument 12345 (at the same time sing“xxx Hello”)
Knock the iron instrument 54321 (at the same time sing “teacher Li Hello)
Knock the iron instrument 1234 (at the same time sing “what is it?”)
Knock the iron instrument 4321 (at the same time sing “this is a duck”)

一、Hello or Social (A): adult, ( C): Client

  Step 1: stimulus: (A) xxx Hello, teacher Le Hello
     response: (C) xxx Hello, Teacher Le Hello (immediately echolalia)

  Step 2
     stimulus: (A) Teacher Le Hello
     response: (C) Teacher Le Hello (immediately echolalia)

  Step 3
     stimulus: (A)x x x Hello
     response: (C) Teacher Li Hello (creative, comprehension and interaction)

二、Naming

  Step 1
     stimulus: (A) What is it?
     response: (C) What is it ? (immediately echolalia)

  Step 2
     stimulus: (A) This is a duck !
response: (C) This is a duck! (immediately echolalia)

Step 3
stimulus: (A) What is it?
response: (C) This is a duck! (creative response)

三、comprehension and interaction

Step 1
stimulus: (A) Please give duck to teacher, (A) hand out
response: (C) Please give duck to teacher, (A) teacher point to the picture of duck

Step 2
stimulus: (A) please give duck to teacher, (A) hand out
response: (C) please give duck to teacher (immediately echolalia with hand gesture)

四、Practice repetition, complete sentence and comprehension (6 series of picture)

Step 1
stimulus: (A) brother is sleeping, (A) pointing out the picture
response: (C) brother is sleeping (repetition and look at picture)

After repetition 6 pieces
Step 2
stimulus: (A) Brother ?? ??, (A) pointing to pictures
response: (C) brother is sleeping

Step 3
stimulus: (A) brother is sleeping (A) hand out
response: (C) among 6 pictures to choose, (A) if wrong, point to correct one!

五、2 commands comprehension and expression (puppies and toys of McDonald’s)

Step 1
stimulus: (A) frog eats hamburger (A) choose the hamburger feed the frog
response: (C) frog eats hamburger (immediately echolalia)

Step 2
stimulus: (A) frog eats hamburger,
response: (C) frog eat hamburger (repetition with accuracy movement)
later, do the command, sometimes without repetition.
Randomly change the name of food and animals
Step 3
stimulus: (A)frog eats ??, (A)look at Client with holding hamburger
response: (C)frog eats hamburger , ( answer question ) (A)nodding head ,

Step 4
stimulus: (A)frog eats ?? (A) looks at client with holding hot dog
response: (C)frog eats ?? , client looks at ST with help, (A)tells the answer.

Data collection
Schuler (1979) studied the function of the echoing behavior observed within the context of the occurrence. So this study taped and tried to analyze and 69 observed point in 10 minutes puppies with McDonald’s and 60 observed point in 10 min series of pictures.
All intelligible utterances from this 20 minutes tape were orthographically transcribed. To place each utterance or behavior into one of the following categories: (a) immediately echolalia, (b) delayed echolalia or unclassified utterances. (c) creative utterances, and (d) comprehension.
Each utterance or behavior was analyzed in reference to its interactiveness, situation, linguistic context and independent evidence of comprehension of the utterance or behavior ( Prizant & Duchan, 1981).

Functional categories of utterance, to place each utterance into one of the following categories: (a) situation association, (b) verbal completion (c) label, (d) Request (e) affirmation, (f) nonfocused, (g) creative utterance and (h) comprehension without utterance.

Result:
After MIT, client’s emotional was more stable, purposeful and interactive. Even sometimes he could sit for 20 minutes. In the 13th time session, we taped 20 minutes and analysis pt’s utterances and behaviors. In first task- puppies with McDonald’s games which has 69 points of observations, second task-series of pictures, which has 69 points of observations (table). In first task it showed 13 (19%) unfocused, second decreased to 1 (2%). In first it showed 8 (11.6%) associated acholalia, 18 (26.1%) labeling, 2 request. In second task there is 20 (33.3%) label, 6 (10%) affirmation. In creative utterance part, in first task pt produced 3 utterances (4%), second 18 ones (30%).
In comprehension part, in first task pt could complete 20 (29%), revised 4 (5.8%), in second task, pt could complete 9 (15%), revised 3 (5%).
Discussion
In the first 2 sessions, pt’s behavior and emotional were irritate. The third time when we sang nursery rhyme, pt was willing joint together to sing. The forth time, using iron instrument and MIT, pt was willing to be guided into social interaction, taking turn with eye contact, naming and comprehensive commands. Singing could make client and therapist have joint attention through music and through melodic intonation pt could develop imitation and naming, through taking turn and dialogue pattern to induce the interaction.

In the tape, client could use eye contact to ask adult giving cueing, understand (22/69) (9/60) and create utterance (3/69) (18/60). A marked impairment in the use of multiple nonverbal behaviors” and “A lack of spontaneous seeking to share enjoyment, interests or achievements with others” (American Psychiatric Association, 1994). Joint attention disturbance has been linked to cerebellar abnormality in autism (Courchesne, 1989). Joint attention skill development has also been linked to affective and motivational processes that may contribute to the developmental difficulties of children with autism (Mundy, 1995) In this study using music to provide the opportunity to exercise joint attention and emotional needs. Finally the element of music, develop joint attention, for which improvisational music making provides a useful medium and modified MIT and applied therapeutic methods such as “dialoguing” (a process where therapist and client communication through their music play.) and to improve the interactive, receptive and comprehension. Autistic children might already learn many vocabularies or sentences, but attention deficit, or poor joint attention, so client could not have the motivation to retrieval appropriate words, so their language ability might be underestimated. If ST programs focus on his interested melodic intonation could induce his language ability. Autistic child needs structure and system therapy to facilitate the meaningful and social response.

Table 1. Language functional category analysis in Puppies with Macdonald’s and 6 series of picture

<table>
<thead>
<tr>
<th>Categories</th>
<th>Behavior or utterance/all response behavior or utterance</th>
<th>Relevanc to linguistic or situational context</th>
<th>Evidence of interactiveness</th>
<th>Evidence of comprehension</th>
<th>Other core features</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immediate Echolalia</td>
<td>Situational association</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>Utterance triggered by object, person, situation or activity</td>
<td>Irrelevance with movement</td>
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<tr>
<td>Verbal completion</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td></td>
<td>Completion of verbal routine</td>
<td>Always response</td>
</tr>
<tr>
<td>Label</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td>Label in reference to action or object</td>
<td>Repetition, this is an egg</td>
</tr>
<tr>
<td>Request</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td>Requesting in order to obtain object or action</td>
<td>Repetition and asked to do that: open door</td>
</tr>
<tr>
<td>Affirmation</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td></td>
<td>Affirmation response to prior utterance</td>
<td>Required to go to school many times. But it seemed that teacher didn’t approve</td>
</tr>
<tr>
<td>Delayed Echolalia or unclassified utterance</td>
<td>Nonfocused</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>Not accompanied by meaningful behaviors</td>
<td>Self-stimulation</td>
</tr>
<tr>
<td>Creative utterance</td>
<td>Turn-taking</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>Self complete utterance</td>
<td>Brother wakes up</td>
</tr>
<tr>
<td>Comprehension the order</td>
<td>Comprehension at First time 20/69*, 9/60#</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>Do the action after giving order</td>
<td>Do the action without any utterance</td>
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<tr>
<td>Revision</td>
<td>4/69*, 3/60#</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>Self-correction or accept other’s second direction by gesture or verbal</td>
<td>Pick up wrong objects but revision</td>
</tr>
</tbody>
</table>

* puppies and Macdonald’s, there were 69 points of observation.

* Series of picture. There were 60 points of observation.