

Modifying Melodic Intonation Therapy

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Short Communication

The useful recent article by Conklyn et al. [1] represents another step in a 40-year-old process of tinkering with Melodic Intonation Therapy (MIT). The purpose of this comment is to review some of the modifications to the program in the early years after its development, and to provide some information about music theory underlying the treatment.

Reports of the MIT protocol developed in the 1970s by the Boston group [2,3] emphasized that it was a language training program that used operant conditioning principles to treat adults with moderate nonfluent (Broca's-type) aphasia. The authors reported success in increasing the expressive abilities of some individuals with aphasia for whom other clinical approaches had failed. The authors described MIT as a programmed approach with two levels of increasing difficulty, each level consisting of several steps. Short phrases or sentences were imbedded in simple, non-distinct melody patterns.

As the patient progressed through the program, the melodic aspect was faded and the program eventually led to production of the target phrase or sentence with normal speech prosody. This technique was developed based on the observation that many individuals with aphasia are able to sing the lyrics of well-known songs learned premorbidly. The originators of MIT subsequently expanded the program to include three levels of increasing difficulty [4,5]. Treatment was administered on an intensive daily basis in individual and group settings. It was suggested that at least three months of daily treatment might be necessary for the completion of the MIT program, although successes were noted before three months had elapsed.

When speakers produce a stressed syllable in a sentence, the voice not only gets louder, but higher in pitch. If each syllable is prolonged somewhat, then a sentence becomes a sort of song. For example, in the sentence, "Jimmy called up," the first and last syllables are stressed, and the middle two are not. Prolonging each syllable might produce a 4-syllable song of F-C-C-F.

Sprechgesang or Sprechstimme?

The third level (actually inserted in the middle, as Level II), was described as Sprechgesang, or speech-song. During and after my own MIT research [6], I discussed Sprechgesang with Robert Sparks on several occasions. We spoke at the meeting of the Academy of Aphasia in Cape Cod in 1980, and exchanged letters (in the years before E-mail) about our forthcoming chapters in the same book [7,8]. My preference would have been to call the intermediate level between singing and speaking Sprechstimme, or speech-voice, for the reasons noted below.

In the Preface to his 1912 melodrama for voice & chamber ensemble, Op. 21, "Pierrot Lunaire," Arnold Schoenberg instructed

performers in the technique of Sprechstimme. Although melody is given in the Sprechstimme by means of notes, it is not intended for singing. Performers are to maintain rhythm as accurately as if they were singing. Schoenberg described differences in tone, where singing tone is maintained, and in speaking, where the performer gives and immediately leaves the pitch. The latter is not intended for Sprechstimme, where speaking should contribute to a musical form, but not be reminiscent of singing.

The method of plotting the rhythm and stress patterns of the target sentences used by Sparks, et al. [3] was adapted from the Kodaly Method of teaching music to children. Zoltan Kodaly was a Hungarian composer, author, and educator. This method uses folk songs, Curwen hand signs, pictures, movable-"do", rhythm symbols, and syllables. In the mid-1800s, John Curwen excluded the staff system of notation from his method, instead using the tonic "sol-fa" notation. In music, solfège (also called solfeggio, sol-fa, or solfa) is a solmization technique (the act, practice, or system of using syllables to denote the tones of a musical scale) to teach sight-singing, with each note of the score sung to a special syllable. The seven syllables typically used in English-speaking countries are: do, re, mi, fa, sol, la, and ti.

In 1870, Curwen developed hand signs in conjunction with the "sol-fa" syllables. A modified version of the Curwen hand signs is used in the Kodaly Method to teach students how to sing in pitch. A different hand sign represents a particular pitch, such as a closed fist for "do" and the thumb down for "fa". The hand sign goes up or down according to the pitch, so that a higher-pitched "do" is signaled at eye level. The method attributed to Kodaly was developed by his colleagues and students in the mid-20th century, based on his teachings. In Steven Spielberg's 1977 film, "Close Encounters of the Third Kind," the French director Francois Truffaut played the part of a scientist who used the Kodaly method of hand signs related to pitch to communicate with space aliens.

Going Back to Go Forward

Conklyn, et al. [1] appropriately highlighted the problems inherent in recommending a therapy that takes between 75-90 hours to complete. Many years ago, we concurred [6] and recommended a combined clinical and home training program for MIT. In a case study, the experimental procedure was administered to the participant during two 1-hour sessions each week at a university speech and hearing center and in the participant's home during 1-hour sessions for up to five days a week. In both instances the procedure was administered by the participant's wife. The participant and his wife sat facing each other across a small table, both at the clinic and at home. Two observers were present at the speech and hearing center to record data; a graduate student visited the participant's home once a week to record data and evaluate the procedure as administered by his wife, who received MIT training by the authors. All home sessions were

recorded and subsequently evaluated by the authors. The trained caregiver demonstrated the ability to function effectively as an SLP assistant.

We identified two potential problems in the MIT protocol during the spouse training period. Sentences that were similar in structure and function ("I am hungry," "I am thirsty," "I am tired") were assigned to the same melodic intonation pattern. We instructed the spouse to follow the stress contours of the sentence, e. g., "I am HUNgry," to identify the stressed syllable (or syllables, as in "I HAVE to go to the BATHroom;" see ref. [1] regarding longer sentences), and produce a higher pitch corresponding to stress.

The spouse sang C-C-D-C tones for "I am hungry" in Level I, Step 4, where a repetition was required, and the participant sang, "To you." Associations with the Happy Birthday song disappeared when the melodic pattern was changed to C-C-F-C. The second problem occurred in Level I, Step 5, where the original program called for the intonation of an appropriate question, e. g., "How do you feel?" This step was modified so that the question was posed in normal speech. It was found that when the question was intoned, the participant responded by imitating the intoned question rather than intoning the target answer.

Finally, MIT and modified MIT as presently conceived appear to be effective, but limited. In our experience, even when treatment occurred both at the speech and hearing center and at home, the responses to questions trained were presented in an artificial set of circumstances. Once trained, the responses should be transferred from an artificially structured situation to a more relevant, unstructured context. Behaviors should be trained to occur in response to verbal and internal stimuli as they occur in the home environment. The range of effectiveness of MMIT should be expanded to unstructured environments.

Where should research on MIT and MMIT go in the future? In our current atmosphere of insurance restrictions, MMIT is well positioned for the mentor or professional (certified and licensed speech-language pathologist) to design the individualized treatment and then supervise others who will deliver the therapy. Some states in the USA have

approved licensing of speech-language pathology assistants who do not have graduate degrees, but are able to work under the supervision of a fully accredited professional. Graduate students and primary caregivers can be similarly recruited and supervised so that they can provide the bulk of the training needed for a successful program of MMIT.

Regarding future research, the author agrees with Conklyn, et al. [1] that training in musical composition can optimize right brain functioning for prosody when left hemisphere language abilities [9] are compromised by non-fluent aphasia. Accordingly, melodic intonation therapy, in its various forms, may be an appropriate field of study for individuals in college and university music therapy programs.

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