Relating Improvisational Music Therapy with Severely and Multiply Disabled Children to Communication Development

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The effect of different levels of preintentional and intentional communication development on musical interaction with children with severe and multiple disabilities has not been explored in the music therapy literature. Aside from stage of communication development, what are the particular influences of disability on musical interaction with children who have preintentional and early intentional communication? A qualitative research project explored these issues. Ten school-aged children with severe and multiple disabilities participated in the project. The most common medical diagnosis was cerebral palsy. Analysis of video recordings and other data confirmed that the children's level of communication development was reflected in individual music therapy. Specifically, children at different levels of communication development varied in their abilities to initiate, anticipate, and sustain participation in turn taking, and to maintain attention to and engagement in the interaction. Both turn taking and playing and singing together were found to be important forms of communication during music therapy. Communication problems related to disability included: difficulties in using objects as a focus of joint attention, difficulties in interpreting the interactive environment, being sufficiently motivated to communicate, severely limited means of interaction, attaining and maintaining an appropriate level of arousal, and lack of interest in interaction and the outside environment. Further study of how music therapy can be re-

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lated to general issues in communication for individuals with severe and multiple disabilities is recommended.

Introduction

Processes in preverbal communication have been used to explain key features of the interaction in improvisational music therapy. These processes include both turn taking and synchronous interaction (Aldridge, 1996a; Bunt, 1994). Literature in special education dealing with the communication of individuals who have not developed speech or other forms of symbolic communication has also drawn on knowledge about how typical infants develop communication before speech. Notably, it has drawn attention to the difference that occurs when typical infants develop an understanding of intentionality—that they can affect others in a predictable way. Some children with severe and multiple disabilities may function, in some regards, at early, preverbal developmental levels. At the same time, the impact of multiple disabilities causes additional difficulties both in expressive and receptive communication and in the ability of communication partners to engage in and sustain interaction.

The model of early communication development used in this research is one commonly used in special education. It draws on sociolinguistic theories of communication development. Terms for developmental stages are those of Coupe and Joliffe (1988), with minor modifications in terminology introduced by K. Bloomberg (personal communication, 1998). Figure 1 relates these to other schemes of cognitive and communication development stage theory.

The most important milestone in the development of communication before speech is the development of intentional communication. Intentional communication is signaling behavior in which the sender is aware, before the fact, of the effect that the signal will have on his or her listener. Important to inferring intentional communication is evidence of persisting in behavior until the effect is obtained or failure is clearly indicated (Stern, 1985).

As typical infants move through the levels of preintentional communication to intentional communication, they develop an expanded repertoire of behaviors, begin to anticipate their part in games and routines, and act more purposefully. From the start, however, infants have an impressive array of capabilities and attributes that allow caregivers to engage in interaction. Caregivers, for
<table>
<thead>
<tr>
<th>Age in months</th>
<th>Piaget: Stages</th>
<th>Stern: Sense of self</th>
<th>Trevarthen: Intersubjectivity</th>
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<td>Pre-intentional</td>
<td>Reflexive</td>
<td>Perlocutionary</td>
</tr>
<tr>
<td>1</td>
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<td>Sensorimotor III</td>
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<td>Sensorimotor V</td>
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<td>Sensorimotor V</td>
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<td>Sensorimotor V</td>
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<td>Sensorimotor VI</td>
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<tr>
<td>12</td>
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<td>Sensorimotor VI</td>
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<tr>
<td>14</td>
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<td>Sensorimotor VI</td>
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</tr>
<tr>
<td>15</td>
<td>Referential</td>
<td>Sensorimotor VI</td>
<td></td>
</tr>
</tbody>
</table>

(Berk, 1994; Bloomberg, personal communication 1998; Coupe & Jolliffe, 1988; Harrison, Lombardino, & Stapell, 1985; Stern, 1985; Trevarthen, Aitken, Papoudi, & Robarts, 1996)

**Figure 1.**
Stages of communication and cognitive development.

their part, consider a wide range of infant behaviors as communicative. Also, from birth, infants and caregivers participate in interlocking transactions, either by taking turns in a protoconversational fashion or by acting together. As development progresses, this turn taking becomes more extended, and the infant develops more independence in the context of the turn taking interaction.

**Parallels Between Music Therapy Literature and Developmental Intervention Literature**

There are numerous parallels between the music therapy literature with this client group, and special education literature that uses a developmental perspective to communication intervention. Parents routinely respond to young infants' behavior as communicative and seek to extend and elaborate this behavior (Coupe & Jolliffe, 1988; Siegel-Causey & Ernst, 1989). Likewise, music therapists respond to and elaborate the child's behavior through music, carefully observing
and incorporating a range of nonverbal behaviors (Aigen, 1996a; Aldridge, 1996a; Ansdell, 1995; Bunt, 1994; Møller, 1996; Nordoff & Robbins, 1977; Saperston, 1973). Music therapists are also concerned with developing the child’s awareness that his or her actions can have predictable effects (Aigen, 1996a; Ansdell, 1995; Møller, 1996; Nordoff & Robbins, 1977; Saperston, 1973). This understanding is crucial to the development of intentional communication.

The context of early communication development is a close, trusting relationship. The literature is replete with discussions of the importance of such a relationship in music therapy, and descriptions of how music helps build such a relationship (Aldridge, 1996b; Boxill, 1985; Bruscia, 1987b, c). Part of the process of developing this relationship is the affective sharing that takes place in musical interaction. Recent literature has drawn explicit links between this affective sharing in music therapy, and in preverbal communication (Bunt, 1994; Pavlicevic, 1990, 1995, 1996, 1997; Trevarthen, Aitken, Papoudi, & Robarts, 1996).

An aspect of communication that has sometimes been neglected is its reciprocal, dynamic, and active nature. Each communication partner affects the other, and the outcome and forms of communication are not predetermined, or controlled by one partner. This theme is also prominent in descriptions of improvisational music therapy (Aldridge, 1996a; Bruscia, 1987b, c; Bunt, 1994; Pavlicevic, 1997; Trevarthen et al., 1996). Early interactive play, which features intrinsic motivation and pleasure, also finds parallels in discussions of the importance of intrinsic motivation in improvisational music therapy (Boxill, 1985; Bruscia, 1987c, d; Bunt, 1994). The elements of inherent structure and predictability in early play (Bruner, 1985; Stern, 1996) are also described in the Creative Music Therapy literature, which notes the importance of a spontaneous and flexibly evolving structure (Aigen, 1996a; Nordoff & Robbins, 1977).

**Additional Difficulties Faced by Children with Severe and Multiple Disabilities and their Communication Partners**

The additional difficulties children with multiple disabilities have in developing an understanding of intentional communication stem both from characteristics related to disability and the effects of these characteristics on communication partners. Children with severe and multiple disabilities may show a low level of responsiveness, and the idiosyncratic responses they do make may be
ignored or misinterpreted by others. Caregivers may see their role in communication as a directive one, rather than a reciprocal one that follows the interests of the child. Severe physical disability limits communication options, and may contribute to learned helplessness, or a tendency to depend on others to initiate communication (Basil, 1992). Communication partners may have particular difficulty interpreting the responses of children with visual impairment, especially in the area of affective sharing, which often depends on mutual regard of facial expression and eye contact (Blackall, 1990).

The purpose of this study was to describe patterns in the communication of children with varying levels of preintentional and early intentional communication and how the consequences of disability affected children’s communication, in the context of individual music therapy sessions. These sessions included the use of a variety of musical media and techniques, but all included improvisation as well as precomposed songs. The therapists intended to respond in the moment to the communication of the child, using this variety of media and techniques.

Method

A qualitative case study approach was used to describe the communication in improvisational music therapy, and the patterns that emerged. This research used methods of naturalistic inquiry, including multiple perspectives, to provide the reader with sufficient detail to determine whether these findings may be relevant to music therapy work with other children with similar difficulties and strengths rather than to arrive at a final statement about children with severe communication difficulties (Aigen, 1993, 1996b; Bruscia, 1995).

The research questions were:

1. How is the child’s developmental communication level reflected in music therapy interaction?
2. How are other communication issues related to disability and its effects on communication reflected in music therapy interaction?

Procedure

Five individual music therapy sessions were video recorded for each of the 10 children participating. A single session was selected, by each child’s music therapist, for analysis. This session was judged
by the music therapist to reflect a successful level of communication for the particular child.

The primary sources of data for this study were The Communication Profile and the Session Description.

*The Communication Profile* (Rainey Perry, 1999) was developed by the researcher to describe features of the child's developmental communication level, interest in communication, and specific disabilities that could affect communication. It was completed by each child's music therapist and discussed with the child's speech pathologist and/or others who knew the child well. Figure 2 summarizes *The Communication Profile*.

The session description was developed by repeated, systematic analysis of each video, describing improvisation techniques used, turn taking, and both musical and nonmusical forms of interaction. The session description was successively revised as analysis proceeded, and included the results of interviews with the participating music therapists. Interpretation of significant features of the session description was discussed both with participating music therapists, and an independent music therapist not directly involved in the study.

Bruscia's Taxonomy of Improvisation Techniques (Bruscia, 1987a) was adapted to describe the improvisation techniques used. This adaptation (Selected Improvisation Techniques (Rainey Perry, 1999) excluded verbal techniques and other techniques that could not be discerned with the data and analysis techniques used.

Due to the emphasis on turn taking in early communication development literature (Coupe, Barber, & Murphy, 1988; Kaye, 1982; MacDonald & Gillette, 1984; Siegel-Causey & Ernst, 1989), this aspect was also examined. Video records were reviewed to determine whether the therapist and child took turns, the balance of the turns, whether turns overlapped, whether successive turns were related, and the purpose of taking turns and playing/singing together in the context of the music therapy session.

Written accounts of the researcher's reflections during data collection (including information about the session or child not obvious from the video) were included in the data. Preliminary findings of the study were also discussed with the participating music therapists and a summary of this discussion included in the data.

As 8 of the 10 children participating in the research were the clients of the researcher, this influenced the data collection methods used and the results. Multiple perspectives and systematic meth-
As well as directions for completing Profile and identifying information, the Communication Profile included the following sections and items:

**PART A**

*Information about participant’s disability.*

*Medical diagnosis, impairments affecting communication.*

*Preconversational skills and interest in communication.*

Rarely initiates communication; Rarely responds to communication, and only occasionally responds to social contact; If communicates at all it is primarily to achieve needs rather than for social uses; Shows a give and take relationship within social routines such as ball games and action imitation; Regularly exchanges messages. Communication is nonsymbolic, idiosyncratic, but understandable to those who know well; Usually appears uninterested in positive interaction with others; Sociable but communication skills appear to be delayed.

**PART B: Level of Communication Development**

*Preintentional Communication*

**Reflexive Level**

Has a limited repertoire of behaviors; many behaviors are reflexive; Shows varying states of alertness; Uses mutual gaze; Orient to sensory stimuli: Familiar/unfamiliar faces; Familiar/unfamiliar voices; Communication partners interpret like/dislike, want/reject by states of comfort/distress, alertness/disinterest

**Reactive Level**

Vocal sounds: cries, vowel sounds, uh uh, ha, p, b, t, d, k; g; m, n, ng, babble

Other responses: Uses body and limb movements; Uses variety of facial movements, smiles; Responds to affective messages of communication partners; Searches for sounds, especially speech; Responds to speech by vocalizing; Shares attention; Anticipates turns in turn taking interactions such as rituals and games.

**Proactive Level**

Vocal skills: Vocalizes to—self; other people; objects; Uses expressive vocalization; Vocalization varies in pitch, volume, stress, quality; Participates in vocal turn taking

Other responses: Searches for/reaches for desired objects and people; Hits, shakes, explores objects; Participates in joint attention and action involving communication partner and object.

*Intentional Communication*

**Informal Level**

Reaches for object and looks at communication partner when desires object; Manipulates objects while looking at communication partner; Manipulates people to attain desired ends; Uses whole body actions to communicate; Intentional use of facial expressions and affective expression; Communication is context bound: communication partner needs to rely heavily on context to understand message; Takes proffered neutral object or hand; Responds to “no”; Responds to commands incorporating situational cues/gestures

**Conventional Level**

To communicate uses:

Gestures including: nods/shakes head, waves, shows, gives, points; vocalizations; protowords/signs, early words/signs; combined gesture, vocalization, protowords/signs, early words/signs

Is able to:

Draw attention to self and objects; Request; Greet; Protest; Reject; Inform; Respond/acknowledge; Use a variety of strategies to initiate communication; Maintain a topic; try to repair breakdowns in communication; Comment about changing facets of environment; Respond to words alone when related to self and familiar objects.

For each section, provision was made to include descriptive and qualifying comments. Level of communication development was determined by consistent selection of several, but not necessarily all, items for that level of communication development. This was influenced by particular disabilities of each child, i.e. children with severe physical disability would have difficulty in manipulating objects, and children with severe dysarthria would have difficulty with vocal sounds.

(Coupe & Jolliffe, 1988; MacDonald & Gillette, 1984)

**FIGURE 2.**

Communication profile (summary).
ods of analysis were used to limit bias. As part of the purpose of the research was to articulate the tacit knowledge of music therapists about work with clients with severe and multiple disabilities, including the researcher’s knowledge of the particular children participating, inclusion of the clinical work of the researcher was deemed appropriate. Because of the idiosyncratic and limited responses of many of the children in the study, it was necessary for analysis to proceed from knowledge of each particular child. The importance of personal knowledge about each child and his or her communication was confirmed when examining the video recordings of sessions by the other two music therapists. It was not possible to interpret many of these children’s responses as a researcher unfamiliar with these two children. Interviews with the two participating music therapists were necessary to clarify issues related to these children’s communication. This practice finds parallels in methods of assessment used by speech pathologists and other clinicians with children with severe and multiple disabilities. These assessments often rely on accounts of parents and others who know the child well.

Participants

Participants in this study were 10 school-aged children with severe and multiple disabilities. Each of the 10 children participated in his or her usual music therapy sessions with his or her regular therapist. For eight of the children, the researcher was the therapist, and the other two children were the clients of two other music therapists. Children participating in the study were chosen from clients receiving individual therapy from the participating therapists. Selection criteria for children participating in the study were:

- No consistent use of any form of symbolic communication, including speech, manual signs, or pictorial systems
- Not diagnosed with autistic spectrum disorders or severe hearing impairment

The parents or guardians of each participant completed consent forms, granting permission for the children meeting selection criteria to participate. Each form explained the purpose of the study and data collection methods to be used. The state education department and facilities participating in the study also provided written permission for students or residents to participate in the study. Figure 3 summarizes information about the children participat-
<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Music therapist</th>
<th>Medical diagnosis</th>
<th>Sensory impairments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jason</td>
<td>6</td>
<td>1</td>
<td>Cerebral palsy with diplegia. Epilepsy.</td>
<td>Astigmatism. Strabismus. Past Hx of recurrent ear infection; No current hearing impairment</td>
</tr>
<tr>
<td>Morgan</td>
<td>7</td>
<td>1</td>
<td>Microcephaly. Epilepsy.</td>
<td>Inconsistent visual and other responses due to epilepsy. Uses peripheral vision, rare/fleeting central visual attention</td>
</tr>
<tr>
<td>Sam</td>
<td>11</td>
<td>1</td>
<td>Cerebral palsy with severe spastic quadriplegia. Epilepsy.</td>
<td>Optic atrophy. Clear vision at 7 cm. or less.</td>
</tr>
<tr>
<td>Sally</td>
<td>9</td>
<td>1</td>
<td>Cerebral palsy. Microcephaly.</td>
<td>No significant sensory impairment.</td>
</tr>
<tr>
<td>Brett</td>
<td>5</td>
<td>1</td>
<td>Cerebral palsy with spastic quadriplegia. Epilepsy.</td>
<td>Inconsistent visual and other responses due to epilepsy. Difficulty sustaining visual attention</td>
</tr>
<tr>
<td>John</td>
<td>8</td>
<td>1</td>
<td>Cerebral palsy with spastic quadriplegia. Epilepsy.</td>
<td>Difficulties with visual attention.</td>
</tr>
<tr>
<td>Ryan</td>
<td>8</td>
<td>2</td>
<td>Cerebral palsy with spastic quadriplegia.</td>
<td>Cortical visual impairment.</td>
</tr>
<tr>
<td>Ted</td>
<td>5</td>
<td>3</td>
<td>Norrie’s Disease</td>
<td>Blind. Hearing impairment, degree unknown.</td>
</tr>
</tbody>
</table>

**Figure 3.**
Age, medical diagnosis, and sensory impairments of children.

...ing in this study. The most common medical diagnosis was cerebral palsy, although children with developmental delay and one child with a genetic condition (Norrie’s disease) were among those in the study group.

**Results**

*Equipment and Approaches Used*

All sessions included the use of improvisation. Various precomposed songs were also used, as well as songs that emerged from improvisation. Improvisational techniques could also frequently be
discerned in songs—accompaniment style, tempo, and dynamics of songs were linked to the responses of the child, and spaces were made in songs to allow for the child’s response. A variety of musical instruments was used, including piano, guitar, various percussion instruments, and a pentatonic zither. Voice was used frequently. Although all therapists used some degree of repeated structure in their sessions, there was considerable flexibility in this structure.

Patterns Related to Developmental Communication Level

The Communication Profiles indicated that four children had reactive preintentional communication skills, three children had proactive preintentional communication skills, and three children had early intentional communication skills.

Reactive communication skills: Jason, Sally, Jay, Ryan. There was a tendency for these children to appear self-absorbed and to show limited interest in events, objects, and people in the environment outside their own bodies. They had difficulty with sustained engagement and attention to interaction, and tended to choose a few repetitive activities when left to their own devices. For two of the four children at this level, particular musical instruments were among their limited interests. This interest led these children to show behaviors of anticipation that were not evident with other objects or activities. One child in this group (Ryan) did not share the above characteristics, but had more significant physical disability. With these children, the therapists sought to structure and elaborate the children’s simple responses. Simple musical structures were often repeated.

These children showed brief indications of awareness of the therapist and his or her music, and generally had difficulty in sustaining attention to the interaction. They were often distracted by habitual repetitive activities centered on their own bodies. Vocal and movement responses often appeared related to feelings of pleasure and excitement. The therapist, who made spaces or interjected, usually initiated taking turns.

Proactive preintentional communication: Morgan, Sam, John. As might have been expected, children at a proactive level of preintentional communication development showed increasingly purposeful behavior during musical interaction. For this particular group of children, there was evident interest in and enjoyment of interaction. In music therapy, they were able to maintain their attention consis-
ently for most of the ten to fifteen minute session. However, all three children in this group had difficulty initiating social interaction and generally relied on others to do so. Unlike children without disabilities at this developmental stage, they had difficulties using objects as a focus of joint attention because of difficulties in using gaze and vision in interaction and limitations in the ability to manipulate objects. Two children had extremely limited means of interaction due to severe physical disability. In one case, simple technology (a drum beater activated by a head switch) was used to facilitate the child’s independent response.

Both synchronous and turn taking interaction were used by the therapist. Sometimes turns overlapped. This use of a variety of improvisation techniques and musical variation served to maintain the interest and attention in the interaction, and aid in the build up of musical tension and excitement. It was often important for the therapist to wait for the child to initiate and respond. However, if pauses became too long, rather than continuing with silence or a verbal prompt, a repetition of previous music was used. By using clear musical structures and routines, and making spaces and interjecting, the therapist was active in encouraging taking turns. These children all appeared to recognize and anticipate taking turns, and their short responses made it easy to structure the interaction in a turn taking fashion. The therapist was also active in using various forms of musical variation to sustain the turn taking, but some children were also able to contribute to this by repeating and varying their movements and sounds.

**Early (informal) intentional communication: Ted, Mark, Brett.** Two of the children in this group (Ted and Mark) had ocular visual impairment. The challenges that visual impairment as part of multiple disability creates were particularly evident with these two boys. They had a well-developed understanding of intentional communication, but showed limited interest in interaction with others. They were able to provide their own stimulation, often by engaging in simple repetitive activities. This, rather than lack of understanding that they could affect others, limited their ability to develop more conventional forms of intentional communication. Brett, in contrast, often did appear interested in initiating interaction, but showed anxiety in many interactive situations. He had strong preferences for and reactions to auditory stimuli. For Brett and Ted, negative interaction was common and it was not always possible to
tell what triggered such negative responses (crying, tantrums). All of these children had difficulty in independently exploring the environment and manipulating objects. Of particular relevance to these children's communication partners, they showed muted positive affective responses. Their facial expressions were subtle and fleeting, and their nonverbal communication could be described as "hard to read."

Creating the right interactive environment was important for these children during music therapy. This included choosing positions that were consistent, but allowed the child some degree of control. Initiation, active response, and choice making were encouraged during music therapy sessions. New instruments were introduced gradually. These children were able to take a more active part in the musical interaction, including influencing the therapist's tempo and pitch. Both taking turns and synchronous music making were important. Synchronous music making was important for maintaining interest in the musical interaction, and this included the therapist's use of techniques that built up the level of musical tension. In a similar fashion, shifting to different musical media, activities, and styles of music was used to maintain interest in the interaction. These children were able to show extended periods of engagement in the musical interaction. It was evident in examining the musical interaction, that they were aware of themselves, of the therapist, of their own music, and the therapist's music. This paralleled their developing understanding of intentional communication.

Communication Issues Related to Disability

Despite the patterns observed related to level of communication development, there were certain issues related to disability that were common to children both with preintentional and early intentional communication.

All of the children in the study group had difficulties in object use and manipulation. Objects assume considerable importance as a focus of joint attention in preverbal communication, particularly at the proactive preintentional and early intentional levels of communication. Although children with severe physical disability do develop alternative means of sharing communication focus and of understanding cause and effect, these means often rely on using
eye contact and gaze. Many of the children in this group have difficulty using gaze effectively in this way, due to difficulties with head control as well as ocular and cortical visual impairment. Another common difficulty was the use of a limited number of repetitive actions when using objects. The variety of means of manipulation of musical instruments and their multisensory appeal (particularly tactile and auditory aspects), made them superior to many early childhood toys for encouraging the use of objects. Children like Morgan, Jay, and Ryan were tactile defensive—they were reluctant to touch objects, and resisted attempts to physically assist them to use and explore objects. Their visual impairment made it difficult for them to anticipate when others were going to assist them. Gradually introducing instruments, using preferred instruments, and using musical cues to facilitate anticipation of physical assistance aided children with tactile defensiveness.

The children in the study group had difficulty in interpreting the interactive environment. They had difficulties with selective attention, anticipation, and perception. By starting with each child's current mood, behavior, or focus of attention, the music therapists facilitated attention. Shifting to different activities, and diverting the child from self-absorbed activities helped in maintaining attention to the musical interaction. The flexible use of repetition and familiar structures aided understanding and anticipation.

Motivational aspects of music therapy were important, both to children who found communication intrinsically motivating, and for those who showed less interest in communication. Consistent attention and engagement in the musical interaction were related to the interest and excitement involved. Creating interest and excitement in music often departed from a protoconversation model of musical interaction, with the most exciting parts of the session involving playing and/or singing together. It was crucial for this excitement and interest to be not just for the music, however, but combined with an awareness of the contribution of the therapist to the music.

Some children in the group had severely limited means of interaction: severe physical disability, difficulties in initiating vocalization, and visual impairment. It is not only difficult to assess the level of communication development of these children (Bloomberg, personal communication, 1998), but also to devise methods...
of intervention that retain the reciprocal, dynamic, active nature of true communication. Music therapy was able to incorporate limited means of interaction and allow the child opportunities to exert control. The child was then able to help set the interactive agenda and attain a response from actions he was able to initiate. Timing in improvisational music therapy could be slow, if necessary, and flexible, to allow sufficient time for the child to respond.

Attaining trust in communication partners may present particular difficulties for children in a school setting who are expected to interact with a large number of adults and other children. Sensory disability causes added difficulty. Some children who have required extensive medical intervention may associate meeting new adults with stressful situations. There may be disruptions in early family life. As well as the usual features of reliability central to the development of a therapeutic relationship such as regular and consistently timed sessions and consistent listening and attention, other approaches facilitated the development of trust in music therapy. Music was used that acknowledged and sometimes contained or held the child’s feelings and responses. The child’s preferences for certain activities and sounds were acknowledged and honored.

Features of the musical interaction that developed the child’s opportunities to understand, anticipate, and exert control in the interaction were also helpful in reducing anxiety. For children who had difficulty attaining a calm alert state, it was important that there be some degree of predictability in the musical interaction. The level of stimulation needed to be adapted to that which attained the child’s attention yet was not too intense, as some of these children went from a state of low arousal to over-arousal.

Having appropriate support and positioning was crucial in attaining the best communication, particularly for children with the most severe physical disability. This needed to be determined individually for each child. Proximity to the therapist also varied depending on the individual.

One of the most challenging difficulties a number of the children faced was lack of interest in interaction and the world outside their own bodies, as described above. Successful musical interaction relied on creating sufficient pleasure, interest, and excitement through the use of a variety of musical media and approaches, including the use of favorite instruments. Such approaches provided the children with a reason to communicate.
Discussion and Conclusions

The results of this research have implications for a number of questions of concern to music therapists who work with children with severe and multiple disability. These questions include:

- How can musical interaction fit into the general picture of communication development for children with severe and multiple disability?
- What are the differences between preverbal communication with typical infants, and musical interaction with children with severe communication impairment, and what are the advantages of considering these differences when designing and delivering music therapy?
- What are the advantages of music therapy in fostering communication with children with preintentional and early intentional communication?

Musical Interaction and General Communication Development

In fitting musical interaction into the general picture of the child's communication development, it is useful to consider the functions of communication. Light (1997) notes that the function of indicating wants and needs has been emphasized in special education, to the exclusion of other functions. She describes another function of communication as developing social closeness. The goal is to establish, maintain, and develop personal relationships with others. If social closeness is considered to be a function of musical interaction, then musical interaction can be more than a context for communication, but can be communicative in itself. Ansdell (1995, p. 26) commented on this when he noted "We communicate with words to convey our meaning, whereas we improvise music to find something meaningful between us." Ruud (1998) also noted that describing musical dialogue in music therapy illustrates the possibility of developing a relationship through music despite initial distrust, lack of common goals, or common understanding. The ability of music therapy incorporating improvisation to develop social closeness through sharing common experiences may be one of its most important functions for some individuals. This study demonstrated a number of possible avenues for developing social closeness and shared experience despite difficulties with be-
ing able to communicate, being motivated to communicate, and limitations in avenues of mutual interest.

Because this study described musical interaction in terms that can be related to general communication development (including abilities to take turns and demonstrate understanding of communicative intention), it places musical interaction within the scheme of general communication development, rather than describing it as a specialized skill.

**Musical Interaction and Early Preverbal Interaction: Alike and Different**

Behavioral models of communication intervention were of limited usefulness to music therapists seeking to describe the communication in improvisational music therapy. Sociolinguistic models of communication will prove significantly more useful. It may be most useful to consider the general concepts of sociolinguistic models, which emphasize the role of the communication partner in extending and elaborating potentially communicative behavior, the reciprocal, interactive, and active nature of communication, and the importance of the child developing an understanding of intentionality, rather than directly relating the specifics described in the mother-infant interaction literature (such as vocal turn taking, movement, and gaze) to music therapy. This is particularly the case with children with severe and multiple disabilities as they may lack some of the visual, movement and vocal abilities of typical preverbal infants.

This study also indicates that there may be other differences between musical interaction and preverbal interaction. Despite intentions to recreate some aspects of preverbal interaction, including turn taking, analysis of the music therapy sessions revealed that to encourage the engagement of the child in the interaction, therapists used strategies to build up the musical excitement that involved more playing and singing together than taking turns. Analysis also revealed that therapists consistently framed the interaction as musical, and that some children appeared to perceive the interaction to be different from other nonverbal interactions.

**Advantages of a Developmental Approach**

Incorporating knowledge of the individual child’s understanding of intentionality provides a different means of evaluating response in music therapy and relating this response to improving communication. It may aid in making sense of the variations in re-
response during music therapy among children who do not use symbolic communication. It may also be possible to use music therapy as a means of assessing or confirming understanding of intentionality despite the child being unable to show common features of intentionality such as alternating gaze between the object of interest and the communication partner. Understanding the importance of intentionality in communication makes it possible for a music therapist to justify focus on the child developing a basic understanding that his or her actions have an effect on another person.

Advantages of Music Therapy for Children with Preintentional and Early Intentional Communication

Each child needs sufficient opportunities to communicate at his or her current level of competence, as well as to extend this level of competence. Opportunities for both initiating and responding, including the use of musical forms of interaction, need to be provided as without these efforts natural opportunities to communicate may be very limited. For children with preintentional communication, musical interaction provides a framework for the communication partner to sustain interaction. Because of the sometimes fleeting and tenuous nature of these children’s responses, it is often difficult for communication partners to maintain their own engagement in the interaction. When partners are unable to find a means of interaction with individuals with preintentional communication skills, they may focus solely on directive activities or decreasing disruptive or self-stimulation activities, without a concurrent focus on increasing positive means of interaction. For children with early levels of intentional communication, musical interaction provides increased positive opportunities to influence others, improved motivation to communicate, and the opportunity to experience a flow of interaction involving repeated turns in the musical “conversation.”

Within this developmental framework, issues that affect the child’s communication related to his or her disability must also be considered. These considerations may affect the pace of music therapy sessions, and the type and level of directiveness employed. For example, for children like Jason, Sally, Jay, and Ted, it was important to redirect habitual and stereotyped activities. For children like Brett, Sam, and John, with difficulties in initiating movement and other responses, it was important to provide opportunities to respond and to wait long enough for the child to respond.
Research about improvisation and about the communication of children with severe and multiple disabilities is fraught with numerous methodological and philosophical challenges. The in-the-moment, unique nature of improvisation and the complex, unique characteristics of children with severe and multiple disabilities lead to some of these challenges. This research study sought to deal with these challenges within a framework of descriptive, qualitative research employing multiple perspectives. At the same time, a major purpose was to document the tacit knowledge three music therapists had about work with the children participating in this study, and to relate this knowledge to a model of general communication development. Although the results must be viewed in an open-ended manner, subject to improvements in our ability to understand and describe these children and the interaction in music therapy, they provide music therapists with general and specific considerations that are relevant both to developmental perspectives in special education, and to actual music therapy practice.

References


