



# Communicating with the uncommunicative: music therapy with pre-verbal adults

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## Summary

This paper is based on a qualitative research project on clinical work carried out at a residential unit for adults with learning disability. Most pre-verbal and nonverbal adults appear able to express emotions such as pain and anger with sounds such as crying, screaming or shouting. These sounds, however, are not always received as communication by care staff and can sometimes lead to further isolation. In addition, some clients make sounds, which seem intended to be self-reassuring or comforting and have become habitual and used as a barrier against others. This study centres on two examples of music therapy with pre-verbal clients where vocalization is used to establish an interactive relationship. In both examples, parallels are drawn with the spontaneous and instinctive strategies used in early parent–infant communication.

Keywords *Communication, music therapy, pre-verbal adults, residential care, voice*

## Introduction

In 1990, when I joined the staff, the residential unit in which the clinical work discussed in this paper took place had approximately 750 residents and was one of the three large hospitals comprising the region's service for adults with learning disability. Since then, because of the movement towards closing large psychiatric and learning disability institutions and rehousing people in smaller homes in the community, most of the residents have been resettled in nearby towns and villages and its population has dropped to about 65.

Many of the large institutions of past decades have been host to attitudes and practices which have denied the individuality of residents and have been negative and, in some cases, disrespectful and abusive (Oswin 1978; Sinason 1992). In the unit where I worked, however, there were improvements in staff training and care practices in the mid 1990s. A collaborative care plan was introduced for each service user,

resulting in more opportunity for liaison among the various professionals working with the residents, especially those being considered for resettlement. Speech and Language therapy, Art therapy, Dramatherapy, Physiotherapy, Vibroacoustic therapy (Skille & Wigram 1995) and Aromatherapy were available on the site in addition to Music therapy, and the grounds were large and safe for ambulant residents to move around without fear of crowds or traffic.

Preparing adults who may have spent many years in 'institutional life' for integration in the community was often far from easy, and some were very resistant to resettlement. Communication difficulties were very common (Van der Gaag & Dormandy 1993), and it was necessary to help clients overcome their fear or mistrust of other people before they could begin to tolerate the world outside the shelter of their immediate environment.

## Communication difficulties and nonverbal and pre-verbal adults

Communication difficulty is particularly prevalent in those with little or no speech. While some have a good understanding of spoken language and are able to make themselves understood with a combination of vocal sounds, facial expressions and gestures or signing, many do not. Some

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service users, for instance, have physical disabilities, which make signing and pointing difficult or impossible and, like those of us who communicate verbally, they rely principally on their voices for conveying meaning to others. In music therapy, any use of the instruments may be impossible.

Other pre-verbal and nonverbal service users have severe communication disabilities such as autism, and it is often extremely difficult to penetrate their isolation. Many appear to have developed no alternative means of communicating and seem determined to shut other people out as much as possible. Their evasive or defensive strategies might include shouting, rocking backwards and forwards and pushing away anyone who comes too close. Vocal sounds which were perhaps once intended to be communicative have become incorporated into habitual behaviour patterns, and it seems ironic that the human voice, the main means of communication for most of us, becomes a barrier against others.

The main focus of my work with both of these client groups is vocal interaction, and I have developed a large range of sounds upon which I can draw to respond to clients who might wail, roar, scream, grunt, babble, make 'raspberry' noises or click with their tongues. In time, a sort of wordless 'conversation' will begin, reminiscent in some ways of a vocal interaction between a parent and an infant.

## Early communication

Communication is a necessity of life (Syder 1992), and it would appear that we come into the world biologically primed to interact with others (Trevvarthen 1988). At birth, we are already able to recognize our mother's voice (De Casper & Fifer 1980 cited in Stern 1985) and to show preference for songs she has sung while we were in the womb (Satt 1984 cited in Lecanuet 1996). Our first cries are accepted and answered by our parents as a means of communication, and this reinforces our capacity for using our voice in a communicative sense and encourages further vocalization (Papousek & Papousek 1981).

An infant's communicative and social development depends on the intuitive skills of parents or care givers to provide an interactive framework within which his/her skills can grow. Participants in a conversation need something in common, which they can share (Marková *et al.* 1995), and mutuality, or common ground, is established and developed during their dialogue (Luckmann 1990 cited in Graumann 1995). In a similar way, a parent and an infant need to find common ground in pre-verbal dialogues, and parents intuitively provide the framework for this (Papousek 1995).

During the first months of the infant's life, parents will focus mostly on his/her behavioural state and activities (Papousek 1995; Papousek & Papousek 1987). They almost always answer in the same modality, for instance, responding to the infant's vocalizing by vocalizing themselves or to

his/her making a face by making a face themselves (Papousek & Papousek 1981 cited in Stern 1985). After about 9 months, however, their responses extend beyond imitation into interpreting the feelings behind the behaviour and responding accordingly (Trevvarthen 1980; Stern 1985). The parent, for instance, might sing or talk about why the infant is waving his/her arms up and down. The infant in turn reads the parent's response as being connected with his/her original feeling experience and not as merely imitating his/her behaviour (Pavlicevic 1990).

## Early interaction and music therapy

Parent-infant dialogues and games play a central part in a child's development of communicative skills and help prepare the infant for the development of verbal communication (Schaffer *et al.* 1977; Bruner 1983; Papousek 1995). Parallels are often drawn between strategies used in parent-infant interaction and those used by music therapists with their clients (Bunt 1994; Ansdell 1995; Robarts 1996; Pavlicevic 1997; Tyler 1998; Wigram 1999). Both situations provide a framework for mutuality, growth and development. Parallels are drawn, too, between rhythmic structures found in early interaction and music. Parent and infant watch each other to find a shared beat on which they both can move, and the overlapping and turn taking within their dialogue have some similarity to musical phrases (Trevvarthen 1988).

The Nordoff and Robbins music therapy approach (Nordoff & Robbins 1971, 1977), in which I was trained, uses spontaneous musical improvisation between therapist and client to establish and develop a relationship within which the therapy can take place. The client's instrumental and vocal responses, and physical movements when appropriate, are acknowledged and incorporated in the therapist's music. The therapist also shares the client's emotional state, interpreting and reflecting the feelings underlying his/her sounds, movements and facial expression and responding musically to any changes in his/her responses. As in the infant's case, the client not only experiences his/her own feelings being heard, accepted and supported, but also discovers the communicative possibilities of expressing his/her feelings to another person. By working in this way, the therapist is not in any way treating an adult client as a baby but is accepting his/her chosen way of communicating as a starting point for the therapeutic relationship.

## Music therapy and the voice

'Tuning in' to a client's vocal sounds in music therapy is not new, especially in work with children (Bunt 1994). The therapist does not imitate the client's vocalizing exactly but rather uses some features of it, extending and varying as appropriate to elicit further response. Where multidisciplinary team-work is possible, music therapists can sometimes

work in collaboration with speech and language therapists, using pre-verbal dialogue to develop communication systems for children or pre-verbal adults (Oldfield & Parry 1985; Zallik 1987).

### Communication difficulties and residential care

For many people with unmet psychological needs, learning disability or autism, a communicative parent–infant relationship may either have failed to develop normally in its early stages (Hobson 1993, 2002), or have been interrupted at a later stage by some change in circumstances (Hollins 1985; Sinason 1992). The mother of a newly born disabled child, for instance, might be depressed or otherwise unwell and therefore unable to respond spontaneously and appropriately. For an older person with a disability, moving into an ‘institution’ or group home can result in loss of family, individuality, independence and privacy, which can result in depression, lethargy and an increasing feeling of isolation (Oswin 1978).

Nursing and care staff are among the people most able to bring about change in clients’ communication skills, as they spend most time with them (Chatterton 1999), but some find it difficult to believe that the communication skills of adults with learning disability have any hope of improvement (Aldridge 1996). Staff may sometimes overestimate clients’ understanding of verbal language, or fail to identify non-verbal behaviour as a means of communication (Purcell *et al.* 1999). The informal communication systems of people with profound and multiple learning disabilities, too, are often difficult to understand and, even in cases where they are recognized as such, are likely to break down after a while (Porter *et al.* 2001).

Vocal sounds can sometimes be ignored, interpreted as ‘attention-seeking’ or otherwise misunderstood. I have seen many instances of residents being moved to a room on their own so that their shouting, crying, wailing or screaming would not disturb other people. Sometimes radios and televisions have been switched on at full volume in an attempt to mask the sounds, thus appearing to add to the rejection and isolation of their perpetrator. One such client was ‘O’.

#### Client ‘O’

‘O’ was in her late thirties and had lived in residential care from the age of six. Diagnosed as having cerebral palsy of the spastic diplegia type, visual impairment and microcephaly, she had very little motor function, no speech and, it was thought, little understanding of language. She spent most of her time in a matrix chair, and, in addition to suffering from the discomfort caused by her flexed joints and inability to move her limbs, she was prone to oral and pharyngeal thrush and eczema. When she reached her mid thirties it was

noticed that she often cried for no obvious reason. It was not known whether the cause was pain or depression, but the result was that she was often moved into a room by herself so that the other residents would not be disturbed.

Instrumental work was impossible for ‘O’, as she was physically unable to play an instrument or hold a beater. Although I had been warned that it would be difficult to work with her because she ‘could not do anything’, the melodic quality of her crying led me to believe that it might be possible for us to establish and build up a relationship through vocalization. Sessions took place weekly in a sitting room on her ward, and each lasted approximately 30 min.

As part of my research project, I made a musical transcription of a 2-min extract from ‘O’'s first session and analysed it in detail. The interaction was based on her crying, which often contained recognizable musical pitches and followed melodic shapes. Her phrase lengths were determined by her breathing, and her pauses for intake of breath enabled me to sing in reply. I supported our vocal interaction with slow chordal accompaniment on the piano.

The analysis suggested that, far from being a habitual sound used deliberately to isolate herself from others, ‘O’'s crying was expressive and communicative in intent and that she was responding to my singing and playing. She sometimes echoed notes I had sung and, especially after a point where we established a mutual pulse (Trevathan 1988), the notes of her crying became more rhythmically related to my singing. Our dialogue seemed more conversational and, despite the growing tiredness and discomfort, which I could hear in her voice, ‘O’ seemed to be trusting our relationship enough to share her feelings with me in an increasingly purposeful way.

#### Client ‘J’

‘J’ was in his mid thirties and had lived in the unit since he was 13. Diagnosed autistic, he had no speech and displayed stereotyped behaviour patterns and sudden mood swings. He went through periodic phases of unsettled and unpredictable behaviour, including screaming, stripping, incontinence, throwing objects and eating foliage from plants and trees. These phases occurred at approximately 6-week intervals, often shortly after a social event or community visit. The clinical psychologist believed that his distress was due to extreme anxiety caused by fear of social situations.

‘J’'s sessions took place weekly at the Music Therapy Department and usually lasted for 30–40 min. He appeared very uncommunicative at first, often sitting on the floor rocking backwards and forwards or twiddling small objects in front of his eyes. Occasionally, he would accept a beater and play a few beats on a drum or xylophone, but his playing did not appear purposeful and the flicking wrist movement that he used seemed no more than a continuation of his habitual twiddling. He occasionally made vocal sounds,

including quiet humming and high-pitched whooping or screaming, all of which were incorporated into our music.

I made a musical transcription of a short vocal extract from an early session and analysed it in detail. When 'J' was going through a distressed phase, he was unable to come to the Music Therapy Department and his sessions occasionally took place in his ward. On this occasion, he was on his bed in the dormitory-style bedroom, naked, tossing restlessly and clutching a soft toy. His screaming and sobbing could be heard throughout the building.

The analysis showed two distinct vocal sounds: sobbing or screaming, and the subdued humming of a four-note rhythmic motif. Whereas 'J's' sobbing and screaming appeared expressive and communicative in intent, he appeared to be using the subdued motif to comfort and reassure himself. It seemed to represent a part of his inner self, which he was trying to protect by keeping it to himself, and I felt that it was only by penetrating it that I would be able to make contact with the 'real J'. Unlike his high-pitched distress sounds, it was in his natural 'man's' register and, at first, kept to the same two notes, even when I changed the tonality of my singing. After a while, however, he became still and quiet and began following my pitches for the first time. His 'man's' voice seemed more confident and communicative and his sobbing and screaming subsided.

## Research findings

As with 'O', there was a point in the interaction after which 'J' seemed to show a higher level of awareness and acceptance. In both cases, I 'tuned in' to the clients' voices (Bunt 1994), using the sounds I heard as a basis for establishing a common tonality and pulse (Trevarthen 1988). At the heart of both vocal exchanges, however, was not a purely musical interaction based on pitches and rhythms but the growth of understanding of the emotions underlying the vocalizations. As in parent-infant exchanges, it was necessary to interpret and reflect the clients' feeling states, from their movements and facial expressions as well as their voices, and from the expressive qualities of their voices as well as the notes and rhythms (Trevarthen 1980, 1987; Stern 1985; Pavlicevic 1990, 1995; 1997).

In both cases, there appeared to be a growth of acceptance and trust in the relationship, which brought about a shift towards more mutuality in the vocal dialogue. 'O' and 'J' seemed to be becoming aware of more than merely a voice imitating their sounds: they were beginning to hear my responses as being related to their emotions, to share their feelings with another person and, perhaps for the first time in years, to hear themselves being heard (Ansdell 1995). As infants begin to experience themselves within the context of an interactive relationship with their parents, it appeared as though they were beginning to see themselves as emotional and communicating beings.

## Conclusion

Both 'O' and 'J' were reported by their relatives and by other staff to show improvements generally in their communicative and social skills, and it was believed that music therapy had played a significant part in this. My study suggests that:

- Vocalization can play an important part in establishing and developing a therapeutic relationship in which clients' communicative skills can grow.
- It is possible to distinguish between sounds intended to be communicative and those that appear self-isolating/self-comforting (i.e. habitual).
- Both these categories of sounds can be used in an interactive musical context.

It would appear that music therapy can help reduce the isolation of adults living in residential units, but opportunities for clients to generalize their communicative improvements in everyday life can happen only with adequate staff training and resources. Like a young baby, a pre-verbal or nonverbal adult living in a residential unit is dependent on his/her principal care givers, not only for basic needs such as feeding, washing and dressing but also for establishing and developing intercommunicative relationships, which will give him/her the skills and experiences necessary for trusting and relating to other people.

Speech and language therapists have shown that working with key worker and client together in a communication partnership can produce a successful outcome (Bartlett & Bunning 1997; Glenwright *et al.* 1999). Perhaps an input from music therapists could be helpful in projects of this type, for instance, in helping staff to recognize and acknowledge the various nonverbal ways of communicating employed by their service users and to help develop their confidence in responding, especially in using their voices. Such projects might also be of value in adult education colleges or day centres which follow intensive interaction programmes, where an educational approach based on interactive mothering skills is used to help develop language, cognition and social skills in people with severe and complex learning disabilities (Nind & Hewett 1988).

Unfortunately, as a result of the closure of large institutions, multidisciplinary models of working in which staff can liaise regularly are often more difficult to organize because of the fragmentation of services which has resulted in some areas. It is more important than ever for therapists, consultants, key workers and other staff to maintain links with each other, and to ensure that they are pooling their skills and resources instead of working in isolation.

In spite of profound physical disabilities ('O'), autism ('J'), severe learning disability (SLD) and years of institutional life (both), 'O' and 'J' were able to respond to another human voice and, over the course of their music therapy, develop their communicative and social skills. This would appear to

- 1) **Pulse** (Stern *et al* 1975, Papousek 1994, Trevarthen 1988)
- Both Clients
- More simultaneous vocalisation at first
  - Growth of equality in turn-taking towards establishment of mutuality
  - Feeling of mutuality is reached only when a shared tempo is established
  - More conversational after a common pulse is established
- 2) **Sounds of Distress** (Papousek & Papousek 1981, Papousek *et al* 1991, Papousek 1995, Stern *et al* 1975)
- | <u>Client 'O'</u>   | <u>Client 'J'</u>   | <u>Both Clients</u>   |
|---|---|---|
| <ul style="list-style-type: none"> <li>- Client imitates therapist's pitches</li> <li>- Client vocalises again after therapist's vocal responses</li> </ul> | <ul style="list-style-type: none"> <li>- Client more vocally active when in emotionally aroused state</li> <li>- When calmer, client vocalises less and appears to listen to therapist</li> </ul> | <ul style="list-style-type: none"> <li>- Therapist responds with falling intervals intended to soothe</li> <li>- Increase of overlapping phrases during moments of greater distress</li> <li>- Growth of confidence in using voice communicatively</li> </ul> |
- 3) **Melody and Rhythm** (Papousek *et al* 1987, Papousek 1995, Trevarthen 1988)
- Both Clients
- Therapist's imitation, reflection, extension and varied repetition of client's sounds
  - Therapist's adjusting or correcting pitches and rhythms when appropriate
  - Upward-turning melodies at phrase-endings to elicit further response
- 4) **Emotions** (Stern 1985, Trevarthen 1980, 1987, Pavlicevic 1990 (unpublished PhD thesis, University of Edinburgh), 1997)
- | <u>Client 'O'</u>   | <u>Client 'J'</u>  | <u>Both Clients</u>  |
|---|--|--|
| <ul style="list-style-type: none"> <li>- Therapist observes and interprets 'O's' twisted posture &amp; pained facial expression</li> <li>- Therapist hears &amp; answers 'O's' sadness</li> </ul> | <ul style="list-style-type: none"> <li>- Therapist observes &amp; interprets 'J's' restless tossing &amp; anguished facial expression</li> <li>- Therapist hears &amp; answers 'J's' distress</li> </ul> | <ul style="list-style-type: none"> <li>- Clients recognise therapist's voice as offer of support</li> <li>- Clients hear therapist's responses as being related to their emotions</li> </ul> |

**Figure 1** Summary of parallels with parent–infant interaction.

add weight to the theory that we are born with an innate capacity for communicating with others.

My analyses seemed to show many similarities between my spontaneous vocal responses and the instinctive strategies used by parents interacting with their infants (Fig. 1). The analyses, however, were made retrospectively. Such strategies were far from my mind during the sessions with the clients and, in fact, I have very little personal experience of interacting with infants. Music therapy can be an effective medium for establishing an interpersonal relationship with nonverbal clients, but I believe that many other staff, also, could tap into the intuitive and spontaneous ways of relating which exist in us all.

## References

- Aldridge D. (1996) *Music Therapy Research and Practice in Medicine*. London, Jessica Kingsley Publishers Ltd.
- Ansdell G. (1995) *Music for Life*. London, Jessica Kingsley Publishers Ltd.
- Bartlett C. & Bunning K. (1997) The importance of communication partnerships: a study to investigate the communicative exchanges between staff and adults with learning disabilities. *BJLD*, 25: 148–53.
- Bruner J.S. (1983) *Child's Talk*. Oxford, Oxford University Press.
- Bunt L. (1994) *Music Therapy – an Art Beyond Words*. London, Routledge.
- Chatterton S. (1999) Communication skills workshops in learning disability nursing. *Br J Nurs*, 8 (2): 90–6.
- De Casper A.J. & Fifer W.P. (1980) Of human bonding: newborns prefer their mothers' voices. *Science*, 208: 1174–6.
- Glenwright S., Davison A. & Hilton R. (1999) Communication training and aphasia: a case study. *Br J Ther Rehabil*, 6 (9): 430–5.
- Graumann C.F. (1995) Commonality, mutuality, reciprocity: a conceptual introduction. In: Marková I., Graumann C., Foppa K.,

- editors. *Mutualities in Dialogue*. Cambridge, Cambridge University Press: 1–24.
- Hobson R.P. (1993) *Autism and the Development of Mind*. UK, Lawrence Erlbaum Associates Ltd.
- Hobson R.P. (2002) *The Cradle of Thought: Challenging the Origins of Thinking*. London, Macmillan.
- Hollins S. (1985) Families and handicap. In: Craft M., Bicknell J., Hollins S., editors. *Mental Handicap: a Multi-disciplinary Approach*. London, Baillière Tindall.
- Lecanuet J.-P. (1996) Prenatal auditory experience. In: Deliège I., Sloboda J., editors. *Musical Beginnings*. Oxford, Oxford University Press.
- Luckmann T. (1990) Social communication, dialogue and conversation. In: Marková I., Foppa K., editors. *The Dynamics of dialogue*. London, Harvester Wheatsheaf: 45–61.
- Marková I., Graumann C.F. & Foppa K., editors. (1995) *Mutualities in Dialogue*. Cambridge, Cambridge University Press.
- Nind M. & Hewett D. (1988) Interaction as Curriculum. *Br J Special Edu*, 15 (2): 55–7.
- Nordoff P. & Robbins C. (1971) *Therapy in Music for Handicapped Children*. London, Gollancz.
- Nordoff P. & Robbins C. (1977) *Creative Music Therapy*. New York, John Day.
- Oldfield A. & Parry C. (1985) Using music in mental handicap. Part 1. Overcoming communication difficulties. *Ment Handicap*, 13: 117–9.
- Oswin M. (1978) *Holes in the Welfare Net*. London, Bedford Square Press of the National Council of Social Service.
- Papousek M. (1994) *Vom ersten Schrei zum ersten Wort: Anfänge der Sprachentwicklung in der vorsprachlichen Kommunikation*. Bern, Huber.
- Papousek M. (1995) Origins of reciprocity and mutuality in prelinguistic parent–infant ‘dialogues’. In: Marková I., Graumann C.F., Foppa K., editors. *Mutualities in Dialogue*. Cambridge, Cambridge University Press: 59–81.
- Papousek M. & Papousek H. (1981) Musical elements in the infant’s vocalizations. Their significance for communication, cognition and creativity. In: Lipsitt L.P., editor. *Advances in Infancy Research*, Vol. 1. New Jersey, Ablex, Norwood: 163–224.
- Papousek H. & Papousek M. (1987) Intuitive parenting: a dialectic counterpart to the infant’s integrative competence. In: Osofsky J.D., editor. *Handbook of Infant Development*, 2nd edn. New York, Wiley: 669–720.
- Papousek M., Papousek H. & Haekel M. (1987) Didactic adjustments in fathers’ and mothers’ speech to their three-month-old infants. *J Psycholinguistic Res*, 16: 491–516.
- Papousek M., Papousek H. & Symmes D. (1991) The meanings of melodies in motherese in tone and stress languages. *Infant Behav Dev*, 14: 415–40.
- Pavlicevic M. (1990) Dynamic interplay in clinical improvisation. *J Br Music Ther*, 4 (2): 5–9.
- Pavlicevic M. (1995) Interpersonal processes in clinical improvisation: towards a subjectively objective systematic definition. In: Wigram T., Saperston B., West R., editors. *The Art and Science of Music Therapy: a Handbook*. Harwood, Academic Publishers.
- Pavlicevic M. (1997) *Music Therapy in Context*. London, Jessica Kingsley Publishers Ltd.
- Porter J., Ouvre C., Morgan M. & Downs C. (2001) Interpreting the communication of people with profound and multiple learning difficulties. *BJLD*, 29: 12–6.
- Purcell M., Morris I. & McConkey R. (1999) Staff perceptions of the communicative competence of adult persons with intellectual disabilities. *Br J Development Disabil*, 45 (Part 1, 88): 16–25.
- Robarts J. (1996) Music therapy for children with autism. In: Trevarthen C., Aitken K., Papoudi D., Robarts J., editors. *Children with Autism. Diagnosis and Interventions to Meet Their Needs*. London, Jessica Kingsley Publishers.
- Satt B.J. (1984) *An Investigation into the Acoustical Induction of Intra-Uterine Learning*. Unpublished DPhil Thesis, Californian School of Professional Psychologists.
- Schaffer H., Collis G. & Parsons G. (1977) Vocal interchange and visual regard in verbal and pre-verbal children. In: Schaffer H.R., editor. *Studies in Mother – Infant Interaction*. London, Academic Press.
- Sinason V. (1992) *Mental Handicap and the Human Condition*. London, Free Association Books.
- Skille O. & Wigram T. (1995) The effect of music, vocalisation and vibration on brain and muscle tissue: studies in vibroacoustic therapy. In: Wigram T., Saperston B., West R., editors. *The Art and Science of Music Therapy: a Handbook*. Switzerland, Harwood Academic Publishers.
- Stern D. (1985) *The Interpersonal World of the Infant*. New York, Basic Books.
- Stern D.N., Jaffe J., Beebe B. & Bennett S.L. (1975) Vocalising in unison and in alternation: two modes of communication within the mother–infant dyad. *Ann New York Acad Sci*, 263: 89–100.
- Syder D. (1992) *An Introduction to Communication Disorders*. London, Chapman & Hall.
- Trevarthen C. (1980) The foundations of intersubjectivity: development of interpersonal and co-operative understanding in infants. In: Olson D., editor. *The Social Foundations of Language and Thought: Essays in Honor of J.S. Bruner*. New York, W.W. Norton.
- Trevarthen C. (1987) Sharing makes sense: intersubjectivity and the making of an infant’s meaning. In: Steele R., Threadgold T., editors. *Language Topics: Essays in Honor of Michael Halliday*. Amsterdam/Philadelphia, John Benjamins.
- Trevarthen C. (1988) Infants trying to talk: how a child invites communication from the human world. In: Soderbergh R., editor. *Children’s Creative Communication*. Sweden, Lund University Press: 9–31.
- Tyler H.M. (1998) Behind the mask. An exploration of the true and false self as revealed in music therapy. *Br J Music Ther*, 12 (2): 60–6.
- Van der Gaag A. & Dormandy K. (1993) *Communication and Adults with Learning Disabilities*. London, Whurr Publishers.
- Wigram T. (1999) Contact in music. The analysis of musical behaviour in children with communication disorder and pervasive developmental disability for differential diagnosis. In: Wigram T., De Backer J., editors. *Clinical Applications of Music Therapy in Developmental Disability, Paediatrics and Neurology*. London, Jessica Kingsley.
- Zallik S. (1987) In search of the face – an approach to mental handicap. *J Br Music Ther*, 1 (1): 13–6.

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